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THE CLINICIAN OF THE FUTURE *

JAMES B. HERRICK, M.D.
CHICAGO

By the word clinician I mean the physician who comes in contact with the patient, in his bed (κλίνη), in the hospital, at his home, in the dispensary or in the private office. We ordinarily think of the clinician as opposed to the nonpracticing laboratory man, who may not be a graduate in medicine and who is not immediately concerned with the living patient—the anatomist, chemist, pathologist, physiologist or pharmacologist. My theme, therefore, is the doctor of the future who is the practitioner, who sees, examines, advises and treats patients, rather than the investigator or teacher along lines of so-called pure science. I have no special thesis to defend. I do not presume to settle definitely the many problems involved. My address, therefore, will lack the "punch" that comes from advocating ideas that seem final and unequivocally right. It will lose force because of inconclusiveness. But I cannot speak otherwise, for the solution of many of these problems lies in the future, to be evolved as time goes on. The questions are too complex; they touch life at too many points to enable any one today to essay a final analysis. The patient, the general practitioner, the hospital doctor, the specialist, the education of the undergraduate and graduate; conditions of private practice, state medicine, preventive medicine, hygiene all come up for consideration. They are not to be settled now by dogmatic ex cathedra statement, by resolution of medical organizations, by speech making or even by acts of legislative bodies. These efforts may help in the way of education and in stimulation of intelligent discussion, but they do not consummate. Only time can do that. My address might better be entitled "Stray Thoughts on the Clinician."

The clinician of the future will be human much as now. He may wear clothes of latest fashion or be indifferent as to dress. He may be of honeyed word or brusque of speech; he may be careless in money matters or shrewd and a bargainer; he may be aggressive and self-assertive or modest and self-effacing, but the human nature that is in him will be much the same then as it is now, as it was when Chaucer sang of the doctor of physic or when Homer recorded the sayings and doings of the ἰατρός. There will be jealousy, selfishness, even dishonesty, as there will be generosity, self-sacrifice and highmindedness. No plan for the clinician, no dream will make him more unhuman, more superhuman than the average of the race about him.

I imagine he will continue to work for gain, reputation, opportunity, power. If public sentiment demands a limit to his financial return, he may charge less than now for his services—or some, the general practitioner, may charge more. Or the socialistic notion may prevail and he may be obliged to submit to a legal restriction as to the character of his work, its scope and remuneration. We can, at least, hope for freedom from too rigid state control; a control repugnant to our ideas of the dignity of the profession. We trust that the clinician of the future will not be too commercial. The trade view of medicine is abhorrent. In too many articles and addresses written by physicians, the argument is based almost entirely on the money value of his services. This betrays an unfortunate trend of thought, which too emphatically views medicine as a trade. We all are human. The laborer is worthy of his hire. But is it not possible to retain some of the old tradition of medicine as a profession and not a trade?

This future clinician, what type of general practitioner will he be? What will be his relations to his patients and his colleagues? How and where is he to practice? How is he to be educated?

TYPE OF GENERAL PRACTITIONER

The general practitioner or family doctor has been the backbone of the profession. So his gradual disappearance in city and country has spread dismay among physicians and the laity. "Give us back the old family doctor," cry the people; "otherwise whom can we trust, on whom can we lean in time of illness? He is the only really dependable physician. Hospital doctors are ultrascientific; specialists are narrow-minded." "He must be preserved," cry the doctors, "and essentially as he was, the family adviser and confidant, the one who diagnosed and treated all save the most obscure and most serious diseases. He must be preserved, or the whole fabric of practical medicine falls."

There is truth in this attitude, but it is largely sentiment. Affection for the family doctor has too often blinded people to his many shortcomings. His assiduous attention in the case of the woman who dies of childbed fever three weeks after he delivered her of her first-born child, also dead, leaves a feeling of gratitude on the part of the bereaved husband, who marvels that his neighbor pays a high price for the few brief visits made by the specialist in the lying-in hospital. The old family doctor for one-half the fee made five times as many calls and even stayed at the house all night in devoted watchfulness. The neighbor has his wife and baby. He, poor deluded man, has lost both. Yet God is good, he reflects. "Thank God for our old family doctor."

We all admit in our sane moments that there is an immense amount of poor surgery, crude diagnosis, use-

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* President's address, read before the Institute of Medicine of Chicago, Dec. 1, 1925.

less and harmful therapy on the part of the general practitioner. Some is so underlaid by ignorance and by overweening self-confidence—the result of misinterpreted experience—and is so direful in its consequences as to be little short of malpractice.

The difficulty is that there are two sides to the question. There is much justification for the sentimental view of the general practitioner. There is need of a doctor who has a heart, who feels with his patients, who is, in the derivational sense of the word, sympathetic, who inspires confidence as a man and friend as well as a physician, and who is not so commercial or so scientific as to see in his patient only a fee, a case, or material for investigation.

Without intending to reflect on the magnificent service of the best of the old time family doctors, who were kindly gentlemen of the finest fiber, noble, self-sacrificing and withal wise and practical scientists, I assert that the general practitioner of this type is doomed to go and ought to go. Times have changed! The demands today for a new knowledge and an increase in knowledge, for new ways of thinking, for new methods of practice are so great that a new type must be evolved. What we should be concerned with is not the attempt to reestablish the old family doctor but the new clinician, the general practitioner of the future, who without loss of the intimate personal relation that will make him trusted and loved will embody far more of the doctor, the man of learning. The new practitioner must know more of fundamental sciences and their application in medicine, and must be better able to correlate and to interpret the findings of specialists, laboratories and instruments of investigation. He must be capable of diagnosing the vast majority of ailments that come to his attention, competent to treat a large proportion of them. But of just as much importance, he must recognize his own shortcomings and will know when to call in the specialist and which man to call.

RELATION BETWEEN SPECIALIST AND GENERAL PRACTITIONER

Now to many physicians the specialist is the *bête noire*. He is anathema. There must be only a few, we are told; these must be most highly trained, select and kept apart from the great body of the general practitioner.

Whether we like it or not, specialism is here and is bound to stay, if not permanently, at least for a long season. Medical knowledge has become too enormous for any one mind to grasp it all or even a large proportion of it. No matter how carefully the textbooks and teachers try to boil it down, the practitioner cannot acquire that *all knowledge* that was more nearly possible fifty or seventy-five years ago. He may be a practitioner, but not a general, an *all* practitioner.

There is danger in specialism, it is freely admitted. Specialism is still in process of evolution. Many specialists are such in name only, a name often self-assumed. Many are narrow. Many, poorly prepared, lack broad experience and proper graduate study. They are often more concerned with technic than with diagnosis or indication for treatment. Some are offensively commercial. But in the future one type of clinician will be the well qualified specialist. He will not be confined by any means to our large cities; he will not be narrow. He will be readily available; a man as considerate of his fellow practitioner's reputation and comfort as he is of the patient's pocketbook. On him must lean heavily the practitioner, incompetent to treat certain diseases and trained to admit his incompetence. The operation on gallbladder or prostate gland, the dietetic management of the poorly nourished infant, the expert handling of the neurasthenic, the proper use in certain cases of roentgen ray, radium and perilous drugs, the skilled manipulation of instruments of precision or the technic of applied bacteriology and chemistry—these may be outside the practitioner's field. He must call in the specialist or take the patient to him. This is easy today, so easy, in fact, that the patient often goes to the specialist over the head of the general practitioner, particularly when the illness seems acutely dangerous or chronically baffling. Telegraph, telephone, good roads, the automobile and the small town hospital make specialists easily and increasingly available. With the growing popularization of medical knowledge, the general practitioner must learn to recognize the need of or the desire for the specialist, or often be left out altogether.

The relation between specialist and general practitioner must be more cordial, intimate and cooperative than now; they must be not rivals but colleagues, mutually helpful. Let the profession come out frankly and place the general practitioner on a higher plane of self respectability by taking him in as a partner of the specialist. If necessary, let there be an open—not secret—sharing of a reasonable fee, at least in many cases. This will remove the now strong temptation for the practitioner to do himself, because of the urge for money, what he is really unfitted to do. The result of this partnership will inure to the benefit of the patient, who, in spite of some of our medicine-as-a-trade advocates, is the prime consideration. The moment we fail to keep the ideal of benefit to the patient before us, practice will degenerate and will be in essence dishonest. Dr. Pusey has well put it: "For medical service—our usefulness as physicians to society as a whole—is, after all, our reason for existence and must be the chief object of our policies, as it is the standard by which our worth must be measured."

I am pleading, therefore, not for a substitution of the specialist for the general practitioner, nor for some artificial restriction of the number of specialists, but for a modified, improved practitioner and I might well plead for an improved specialist. I am pleading for more intimate and mutually helpful relations between these two groups.

EDUCATION OF CLINICIAN OF THE FUTURE

This reference to Dr. Pusey may serve as an introduction to another phase of the question of the future clinician——where he will practice and the way in which he will be educated. Dr. Pusey has done a valuable service in fearlessly and forcibly calling attention to the dearth of rural doctors and the need of some relief. I cannot, however, fully agree with him in all points and especially in the emphasis he lays on a lessening of the time and expense requirements of the medical school as a remedy. His plan is, I believe, pedagogically unsound and would be found not to work. A college that consciously trains a man to be mediocre—for in spite of Dr. Pusey's contention to the contrary that is what this plan implies; to know a little, only the essentials in the many subjects—is training along wrong lines. It is an injustice to the student. Somewhere in his course each student should be given the opportunity to learn the meaning of the word *thorough*. He should pursue the study of some subject or a few subjects far beyond the elementary phase; he should do intensive, concentrated work along that line, undeterred by the cry of those to whom this seems like specializing. Our best students often do this now; getting into the laboratory or the clinic of some professor for special or advanced work. Our literary schools recognize this principle. They allow much freedom in their choice of studies, but an undergraduate must specialize—that is, major—in at least one subject and not spread himself out thin over a wide range of topics. Unless this is done in the study of medicine, the doctor who is turned out is mediocre: power that may be lying dormant within him and of which he is unconscious is never developed; he is a man with no particular aim, diffuse and forceless. His later work lacks live interest. He becomes a mere money getter. He loses self-respect. Unless he feels the incentive that comes from a conscious drive toward superiority in some one or a few lines, he stagnates and is soon a negligible quantity.

But more than this, a doctor with only this general diffuse training is dangerous, because he does not know his own limitations. With more thorough knowledge he would shrink from that cocksure frame of mind that leads him to undertake the major operation or to handle the therapeutic medicinal agent that he so poorly understands. Knowledge is power and should oftener be power for good. Fools still rush in where angels fear to tread. The safest man is ordinarily the man who knows the most, who especially knows a great deal about some one thing, who comprehends what is meant by detailed knowledge and who realizes the superior possibilities of expert treatment. A high grade undergraduate education in the essentials, with stress laid on one or two subjects that are studied intensively, even though five years and much money are required, will turn out a product more contented, more progressive, much safer and in every way more efficient than the graduate of the standardized low-level average course of study. *Non multa sed multum* was Waldeyer's motto.

There are defects in our medical curriculum, many of them. Much that is taught should be junked. Faulty methods are in vogue. There is too much of hidebound standardization, too little elasticity, too little freedom for the play of individuality on the part of instructor and student. Save time, if possible, in the elementary and premedical years; but five years is none too long to be profitably employed in preparing a clinician. In fact, one might not only compel the poor student, as we now do, to take six years, but might encourage the good man to lengthen his course to six years or more, at the bedside or in the laboratory, as hospital resident, fellow or research assistant. It is often said, and I think rightly, that the best preparation for a specialist is a few years of general practice. I contend that the best preparation for a general practitioner is a few years of specialism.

One more objection to Dr. Pusey's plan: Will these low standard men go to the country to supply the lack of physicians? And will the people employ them? I fear not. These ordinary doctors will largely do as ordinary lawyers do. Some will go to the country; many will flock to the cities. They did it in Billroth's time, as he recorded fifty years ago. They are doing it today. They go from the village to the small town as practitioners, or they mushroom out as specialists. If they knew more, they would know they were not specialists and would stay in the village. They need the money; they will make it in the city, or think they will, more easily than in the country. If they do stay in the rural districts the people will in any serious illness often pass them by, as they now do, and get the better qualified man from the city, though he is often better qualified only in name. If the doctor is an average man of average training, he will be accorded the standing and receive the patronage of an average man and no more. Let the well trained man from the high grade medical school go into this community. Teach him to estimate his abilities at a fair price so that he is paid, not as now for the distance he travels or for the time he takes as is a taxi driver, but for his skill, his judgment and his opinion. Teach him to be studious, to attend society meetings, to write, to observe, to record and to think at the bedside, in the laboratory and in the roentgen-ray room. Let him perfect himself in some particular phase of disease. In this way, he will be self-respecting and respected by others; he will become the family health adviser, the safe guide, philosopher and friend. What the rural districts need today is not so much more doctors as better doctors.

What I have thus far tried to stress is the point that the doctor of the future must have a training as to facts and methods and their practical application that in medical college and hospital must take about five years. Lessening this time is an injustice to the doctor, fits him for a position of secondary importance and will not force him to go to the country, or if he does go there will not cause the people in the country to employ him.

REVISION OF CURRICULUM

There are some features of our present system of educating these practicing doctors to which I would call attention. These details, though minor, may be worth noting, even at the risk of repeating what others have said. In a revision of the curriculum may not many things be dropped or modified? Many facts in anatomy available through the index, the descriptive text, the illustration and the museum specimen should not occupy valuable space in a man's memory, space more properly occupied by knowledge more frequently needed and of immediate use. May not method of thinking, technic and principles in the preclinical as well as in the clinical subjects be preferably taught in the lecture room, library, laboratory, clinic and ward by means of topics that are live and practical rather than by topics that are purely theoretical and concerned with rare occurrences or with ideas still in a hazy, experimental stage? Even Michael Foster regarded physiology as largely a study for postgraduates. Correct habits of thinking and general principles can be taught by the study of drugs like digitalis or opium as well as by some preparation that is new, and sure to be rarely used or used only in laboratory work. I once told a laboratory teacher of the attempt that had been made years before to cure pneumonia by the production of so-called aseptic abscesses produced by injection of turpentine—"derivation abscesses." He had not known of it but said at once: "That's an interesting problem. I'll put some students at work on it next quarter." Granted that it was interesting; but if he acted in accordance with his sudden impulse did he do justice to his students? Could they not have had the same training by working on some problem more nearly connected with their work of the future?

There is a trend in practice and in teaching away from pathologic anatomy which is to be deplored. I am referring particularly to gross pathologic anatomy. For many years to come, perhaps always, knowledge of altered physical conditions in disease with attendant altered function must remain the basis of diagnosis.

Pathologic anatomy is the mistress of us all, said Neusser. The laboratories have not yet entirely displaced the interpretation of symptoms and signs on the basis of pathologic anatomy. Dr. Cushing is mistaken when he says that physicians have laid aside the stethoscope for the more exact method of diagnosis by means of the roentgen ray. This is an overstatement even though the reference is particularly to the examination for pulmonary tuberculosis. How many foolish and incorrect interpretations of roentgenograms are made because of poor knowledge of pathology. The roentgenologist often undertakes to tell the pathologic lesion of which he has almost no knowledge. He is not helpful; he misleads us. Yet with such knowledge he is extremely helpful.

There is a tendency—we try to combat it but it remains nevertheless—to overestimate the value of the instrumental and the laboratory side of clinical medicine. There is an air of finality about these tests that is far from warranted by the facts, but it attracts us. To elicit a history or to make a physical examination is commonly looked on as not very scientific—as having in it too large an element of human fallibility. Figures don't lie is the old adage, and looking on instrumental and laboratory tests as mathematically precise, we feel that they don't lie, though at times they do. It is such an easy, lazy way to let the instrument do it. The Wassermann test will decide as to syphilis. The roentgen ray will tell us whether there is an aneurysm or pulmonary tuberculosis. We can test the metabolic rate or get the blood chemistry, and disregard the time honored symptoms of exophthalmic goiter or nephritis. Why must we take hours in going over the details of the history, studying stomach contents or making fluoroscopic examinations, trying to decide whether there is ulcer, carcinoma or gallstone? Why not make the exploratory operation that will decide at once?

We all recognize that such teaching or practice is wrong. It trains the student not to examine or to think but to resort to a test tube, a mechanical device or the knife of the surgeon. Worst of all, too often the student or practitioner does not think even when the results of these tests come in to him. He lets some one else do the interpreting. He accepts a long distance finding at its face value. He forgets the possibility of error on the part of the method or the technician. Even the surgeon with his hand in the abdomen or with his gaze on a lesion all too frequently errs.

The instrumental or laboratory test is often of great importance, at times of paramount importance. We may speak of a *deus ex machina* that frequently at the climax of our cases springs forth as in the Greek tragedy to solve the riddle and straighten out the otherwise hopeless tangles. Many of these diagnostic aids—I have in mind especially the roentgen ray and certain laboratory and serum tests—are yet in their infancy. Their proper place, up to the present at least, is as aids that are confirmatory and corrective. They are not the sole arbiters in the case. They are to be fitted into the evidence along with history, symptoms and signs. They are sometimes of negative or even negligible value; at other times, as I have just stated, of supreme importance. This fact should be thoroughly impressed on our clinicians even in their years of undergraduate study.

It is no new thought that the history is worth at least 50 per cent of the diagnosis. Yet until recently in some of our good hospitals histories that amounted to anything were not taken, at least not recorded. I am inclined to think that if we were to analyze our failures in diagnosis, we should find that they depended more on a hasty or incomplete history or the loose interpretation of the history than on careless or slovenly physical examination or neglected special test.

Another phase of this question is illustrated by an incident of a few days ago. In a puzzling case with striking anemia and peculiar blood findings, the intern did not record his leukocyte count of 18,000 because, according to his notion of the case—a reflection of the attending man's view—the leukocytes would probably remain as they had been, from 5,000 to 10,000. He cautiously and modestly thought he had made an error. Now his count was probably right, but his mental attitude was that which is occasionally seen in all of us—he was inclined to see in urinalysis, blood count, electrocardiogram, fluoroscopy, serum reaction and exploratory operation the thing he expected to see. This expectant, previously made up frame of mind is not alone confined to the doctor extracting a history, listening to a lung, palpating a liver or looking at a tonsil. It carries over into the laboratory and instrumental field and robs some of our instruments and technical procedures of much of their precision.

A keen observer, well informed as to medical education in Europe as in the Americas, tells me that there is a striking difference between the education and practice of physicians in Great Britain and the United States. The British depend too little on the technical side, relying more on observation and examination of the patient, while in this country too great reliance is placed on the instrumental and laboratory end. Is not his judgment good, that the best method is a well balanced combination of these two, the one confirmatory or corrective of the other? The late Sir James Mackenzie, for years a general practitioner in a small city, became a skilled observer, a close reasoner. He was inclined to magnify the importance of symptoms and the evidence of the unaided five senses and to belittle that furnished by so-called instruments of precision and by the laboratory. Even physical signs were often negligible because so easily misinterpreted. So we find him attacking the stethoscope and endocardial murmur, the sphygmomanometer and blood pressure readings, the chemical tests of the laboratory and the research of the hospitals. To his mind it was all overdone, largely wrong. The real physician and investigator was the general practitioner who studied or rather restudied symptoms—pain, cough, weakness, dyspnea. Narrow as was his view, unwarranted as were many of his exaggerated statements, there was back of it all enough of fact, perhaps more true of our country than of Great Britain, that justified him in protesting against the undue weight attached to the practical application of instrumental and laboratory tests by experts and by physicians in practice.

To guard against this tendency implies training in observation—sagacious observation, Mr. Flexner happily terms it—in reading and evaluating the work of others, in recognizing one's own and others' limitations and in knowing the meaning and limitations of the methods employed.

RESEARCH

I hope our future clinician will be under the influence of the spirit of research. Unless he comes in contact with the research man, he will be too likely to be a hack worker, not inspired by the search for the new and unknown, or even familiar with the methods of research. He will be unable to evaluate that which is new, as it is announced to the medical world. He must take his opinions largely from others. Untrained in criticism of methods of work or habits of thought, he will be too apt to believe implicitly what is printed merely because it is printed or because it emanates from some famous clinician, well advertised clinic or much talked of laboratory. Our clinician must get some of the fire and enthusiasm of these research men in order to live and not merely exist; in order to produce and not merely to do the daily grind. Here and there the student or graduate will thrill as the consonant chord in himself vibrates in the atmosphere of research, and a real investigator will have been discovered. Investigators, like Cicero's poets, are born rather than made, but they sometimes go undiscovered.

It will be of advantage if our clinician is taught certain facts and methods by the all-time hospital clinician. The concentrative and intensive work in the one subject that I deem so important, the majoring in one topic, might well be handled by the one who has gone deep into the subject, as we *expect the all-time teacher and* hospital clinician to go, largely from the academic and so-called scientific side.

But clinical medicine—using medicine in its broader sense as including medicine, surgery, obstetrics and the specialists—should also be presented to our students by the one who is himself a clinician, a practicing doctor. Such a teacher should be well informed as to facts, well trained as to methods. He must be an expert in the application of his knowledge in diagnosis and treatment. He is intellectually as scientific as his laboratory or all-time colleague. Mr. Flexner's analysis of this point in the early pages of his recent book on medical education is illuminating, and is comforting to clinicians who have long felt the injustice of the too prevalent attitude of supercilious superiority assumed by some laboratory workers. To immure oneself in a hospital or laboratory does not of necessity make a man a scientist. Nor does a man who engages in practice by so doing necessarily lose his scientific habits of thought. What I am pleading for is a teacher who is a practical clinician and whose art is based on a deep knowledge of fundamentals and principles.

EXPERIENCE

The nose is often turned up at the word experience. A laboratory worker thinks he has reached correct conclusions by an animal or test tube experiment, though an honest laboratory investigator told me that he thought 60 per cent of the results of work done in laboratories was wrong in method or conclusions. But for a practitioner to learn by experience at the bedside is regarded as ridiculous. Personal bias and the injection into the observations of so many unrecognized and uncontrollable variables may easily lead to error.

Experience rightly utilized is a mighty force for good. The younger doctor stands amazed at times to see the rapidity and certainty with which the older physician makes his diagnosis—a look, a question or two, a naked ear clapped to the chest, a glance at the temperature or blood chart and the conclusion is reached. It seems almost intuitive, but is, of course, the result of many successes and mistakes, of much reading and comparing of notes and of meditation. Wrongly or loosely analyzed, experience is a power for untold evil. In the meeting of the British Medical Association in 1894 I heard a well known city doctor advocate most warmly the use of antipyrin in typhoid fever largely because he had used it in the treatment of *a case of typhoid in his cousin and the cousin recovered.* A tall, lanky chap, evidently a doctor from the country, rose, walked to the front, faced the audience, and said that he had a stronger argument against antipyrin in typhoid; he had used it and the patient had died, and the patient was not a cousin but a brother. He sat down. The gravity with which he made this statement was one of the most delicious features of this sarcastic thrust at the argument from experience. "How can the patient get well if he doesn't take any medicine?" a practitioner asked me last week. His fifteen years of experience had taught nothing as to the natural tendency of many diseases toward recovery.

There is no greater menace than an opinionated clinician working empirically yet honestly with his misinterpreted experience as his guide. But bedside experience based on acquaintance with scientific methods, with knowldge obtained not alone from books or the laboratory makes the high grade practitioner or clinician. When we wish a goiter removed, we send for him who has a knowledge of what a goiter is, what *it means and who by operation in 500 cases realizes* how and when to do the operation with the minimum of risk. In talking once with the late Christian Fenger, I casually referred to a certain man as a good practical surgeon. Dr. Fenger's ire was aroused; he stormed against the practical surgeons. "I am proud," he said, "to be known as a pathologic surgeon; one whose work is based on pathology and the dead-house and not alone on technic and practical matters. But," and a twinkle came into his eye, "if I am sick and need an operation, I want a practical surgeon to do it."

We feel that the clinician of the future should come into close contact with this type of man, not alone when the teacher is in the making as when he is an assistant or a dozent, but when he is made, when he is a big clinical teacher. His methods, his technic, his encouragements, his warnings, his statistics, his impressions even, his way of handling patients as well as the disease, and his personality should be available to the student who is to go into practice. And, parenthetically, one argument in favor of a retention in the curriculum of the large clinic or lecture is that the entire student body, not merely a favored few, may have free opportunity to see and hear the great clinical teacher and to come under the sway of his personality.

CONCLUSION

I believe, therefore, that the clinician of the future is to be a professional man and not a tradesman. He will see in his patients human beings whose distress appeals to his heart and not alone to his commercial instincts, his scientific or technical skill and pride. He will be well educated as to knowledge and methods. He will have the wisdom to use this knowledge in practice with a due sense of proportion of the value in the recognition of disease, of history, observation and instrumental and laboratory examinations. He will not pretend to know all or to do all as rightly could our practitioners of fifty or seventy-five years ago. He himself will do much less than they did. He will recognize his own limitations and appeal oftener to the expert. Between him and the expert there will be the cordial relation of colleagues and not the antagonism of rivals for trade-gain or reputation. He will be no second rate product of our medical schools but one of first rank. He will be practical but inspired to ever improving work by the spirit of investigation. While clinging fast to that which is good of the old he will be *no slave to tradition, but will be able to throw aside the* disproved old for the proved new. He will be, and will be regarded as being, a scientific man. He will become the family confidant as of yore, the family adviser, well recompensed for his services. He will be self-respecting and respected by others.

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SPONTANEOUS MENINGEAL HEMORRHAGE

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While the French have developed an extensive literature on spontaneous or medical meningeal hemorrhage, comparatively little has been written on the subject by the physicians of other nations. Aside from an article by Leopold,[1] a chapter that I[2] contributed to Tice's Practice of Medicine and a case reported by Dawson,[3] there are but brief references to the subject in English. In Sweden, two comprehensive articles have been published by Ehrenberg[4] and Forsheim,[5] respectively. Only a few articles have been written on the subject in Germany. No attempt will be made to review the literature, the principal references[6] only being given.

During the fifteen years that the members of the meningitis division of the Health Department of New York City have been studying acute conditions of the central nervous system, especially meningitis, poliomyelitis and epidemic encephalitis, we have seen over thirty cases, occurring for the most part in children and young adults, in which a diagnosis of meningeal hemorrhage was made. So few of the physicians with whom we have seen these cases have been familiar with the condition that it seems worth while to describe some of the more interesting cases in detail and to present certain data in regard to the others. These are listed in the accompanying table.

The early symptoms of the cases, especially when there was no underlying disease, were those of an acute, often of a fulminating, meningitis. The onset was sudden, with intense headache, usually vomiting, and not infrequently unconsciousness within a few hours. In some instances, there were twitchings or convulsions. Stiffness of the neck, a positive Kernig sign and various changes in the reflexes occurred from within a few hours to a day or two. In most instances, there was a moderate elevation of temperature from 1 to 3 degrees. The pulse was usually, but not invariably, slow, especially early in the case. Ehrenberg, followed by Leopold, divides the cases into two types, meningitic and apoplectic. This has seemed unnecessary, as merely emphasizing a greater or less severity of onset which might easily be further subdivided. It has not seemed to influence the outcome, as several patients with early unconsciousness have made complete and, in some instances, fairly rapid recoveries.

In this group of cases, none except those noted below have been included that showed spastic paralysis, as of course this would have led to the diagnosis of cerebral hemorrhage. In several instances there was a slight and transitory weakness of the muscles of the face or hand, probably due to pressure. Two cases with more marked paralysis came to necropsy and showed no evidence of cerebral hemorrhage.

Guillain[7] states that the symptoms are due both to pressure and to the toxic products of hemolysis. The diagnosis has been made chiefly by the spinal fluids, which have contained varying amounts of blood in the different cases. The blood at a given puncture has been evenly distributed through the fluid, as shown by collection in successive tubes, and it has not coagulated. When the lumbar puncture is done very soon after the onset of symptoms, the supernatant fluid, on centrifugalization, was nearly clear, or slightly reddish or yellowish. In later fluids, the supernatant liquid was yellow, the depth of color depending on the amount of the hemorrhage. The spinal fluids have been sterile on culture, except in three instances in which the meningeal hemorrhage accompanied an epidemic meningitis. In many instances, the Wassermann test has been done on the spinal fluid and has been negative except in Case 22 in the table. The cytologic and chemical examination have not been of much value in most of the cases on account of the blood.

The following case history is fairly typical:

Case 11.—M. W., a girl, aged 12 years, whose past history was negative except for measles, was seen at midnight, Aug. 10, 1917. During the day, she had received a slight blow on the head while playing with her brother. She had been taken suddenly ill at 2 p. m. with severe headache and vomiting, and began having periods of delirium. At midnight, she was semistuporous; the pupils reacted sluggishly to light; the patellar reflexes, which had been exaggerated earlier, were nearly lost; there was stiffness of the neck and a positive Kernig sign; the temperature was normal, and the pulse 77 and slightly irregular. At lumbar puncture, 30 c.c. of uniformly bloody fluid was withdrawn, and since the picture so strongly suggested meningitis and since horse serum is indicated in hemorrhage, 20 c.c. of antimeningitis serum was given. On the following day, the condition was slightly improved. The patient was less stuporous and more rational. At lumbar puncture, 30 c.c. of somewhat less hemorrhagic fluid was withdrawn and 20 c.c. of serum again administered. On the 12th and 13th, no punctures were done, as the condition seemed to be improving. On the 13th she began to have a rather low, irregular fever. August 14, 30 c.c. of bloody fluid was withdrawn but no serum was given, as the cultures from the previous fluids were sterile. The Wassermann test on the spinal fluid was negative. On the 15th, another puncture was done, as the meningeal symptoms remained marked. The patient was sent to Bellevue Hospital, August 16, where she remained until the middle of October. The meningeal symptoms persisted for some time and necessitated repeated lumbar punctures, the earlier of which revealed hemorrhagic fluids. She complained of rather frequent headaches for some months after she left the hospital. When last seen, in the fall of 1924, seven years later, she showed no evidence of having suffered any ill effects from the meningeal hemorrhage.

A similar but much milder case is the following:

Case 8.—G. K., a boy, aged 9 years, with no history of a previous illness, was taken suddenly ill at 2 a. m., April 29,

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[1] Leopold, Samuel: Spontaneous Subarachnoid Hemorrhage, J. A. M. A. **83**: 1362 (Oct. 17) 1914.

[2] Neal, Josephine B.: Meningeal Hemorrhage, in Tice: Practice of Medicine, New York **10**: 243, 1920.

[3] Dawson, D. L.: Wisconsin M. J. **22**: 426 (Feb.) 1924.

[4] Ehrenberg: Hygiea, 1912, p. 848.

[5] Forsheim, A.: Spontaneous Subarachnoidal Hemorrhages, Hygiea **84**: 1137, 1914.

[6] These are as follows:
Vigneras: Thèse de Paris, 1907-1908.
Aubert: Thèse de Paris, 1911-1912.
Hutinel, Klippel, et al: Maladies des méninges, Paris, 1912.
Testas, A.: Contribution à l'étude de la puncture, etc., Bordeaux, 1915.
Widal: Presse méd., 1903, p. 413.
Babinski: Bull. et mém. Soc. méd. d. hôp. de Paris **3**: 370, 1912.
Follet and Chevrel: Gaz. d. hôp. **83**: 547, 1910.
Mauriac and Ferré: Jour. de méd. de Bordeaux **91**: 111 (March) 1920.

[7] Guillain, G.: Presse méd. **26**: 449 (Sept. 5) 1918.

1918, with headache, vomiting, and occasional periods of delirium. When examined, May 3, he showed moderate stiffness of the neck, marked Kernig sign, absence of the patellar reflexes, and contracted pupils. He was no longer delirious but was slightly stuporous. His pulse was 86 and irregular. He had had a low irregular fever. At lumbar puncture, 15 c.c. of hemorrhagic fluid was obtained and an equal amount of meningitis serum given, for the reasons already stated. The culture from the fluid was sterile and the Wassermann reaction negative. The boy made a rapid and uneventful recovery, and more than six years later was reported to be entirely well.

The following case was seen at the Jamaica Hospital through the kindness of Dr. E. E. Keet:

CASE 18.—J. S., a youth, aged 19, had suffered from a severe electric shock a year previous to his illness and since that time had had frequent intense headaches, slight haziness of vision, twitching of the left hand, and slight left facial weakness. He was taken suddenly ill, Jan. 24, 1925, with headache, vomiting and early unconsciousness. He was seen, January 28. At this time there was moderate stiffness of the neck, and Kernig sign. There was no limitation of motion of the eyes, no ptosis and no strabismus. The pupils reacted normally to light and in accommodation, and the fundi were normal. There was some facial weakness, more marked on the right. The patellar reflexes were diminished; there was no ankle clonus or Babinski sign, though the latter had been present on admission. The abdominal reflexes responded irregularly at different examinations. There was a rather generalized muscular tremor at times. The patient was still semistuporous. His speech was somewhat blurred. He had been having an irregular fever, up to 102. His pulse had varied from 50 to 90 but was regular in rhythm. The systolic blood pressure was 130; diastolic, 70. The blood count showed a moderate leukocytosis, 16,000. There was incontinence of urine. The lumbar punctures had yielded uniformly blood tinged fluid. The Wassermann reaction on the spinal fluid was negative. The patient remained in the hospital for almost a month, gaining steadily. On leaving the hospital, there was some weakness of the left hand, but this disappeared in about a month. The diagnosis of epidemic encephalitis was considered in this case, but meningeal hemorrhage was favored on account of the suddenness and severity of the onset. Moreover, hemorrhagic fluids are rare in epidemic encephalitis.

The following case was seen at Bellevue Hospital through the courtesy of Dr. Charles E. Nammack:

CASE 25.—D. S., a woman, aged 24, with a history of good general health, was not subject to headache until the two weeks preceding the illness. When the illness began, Oct. 4, 1924, she had been riding in a taxicab and had struck her head against the side of the cab, but there was no contusion of the scalp, and the roentgenogram of the skull showed no evidence of fracture. She became suddenly ill with epistaxis, vomiting, headache and pain in the back of the neck, and speedily became unconscious. The patient was examined, October 7. At that time, she was still quite stuporous; there was moderate stiffness of the neck, and Kernig sign. The pupils were equal and reacted to light and in accommodation; there was bilateral ptosis and weakness of the left external rectus. The disks were choked. There was also slight facial weakness. The patellar reflex was increased on the left and diminished on the right. There was no ankle clonus. There was a positive Babinski sign on the left. There was no sensory disturbance. A low irregular fever ranged from 100 to 101. The pulse rate was from 60 to 70. The blood pressure was 120, systolic, and 80, diastolic. The blood count showed a low leukocytosis, 13,600; polymorphonuclears, 81 per cent. The urine was not abnormal. Chemical examination of the blood revealed: blood sugar, 140; nonprotein nitrogen, 34; sodium chlorid, 495. The blood and spinal fluid Wassermann reactions were negative. The spinal fluid was hemorrhagic. On account of the choking of the disks, a diagnosis of brain tumor had been considered. However, the choking of the disks disappeared on repeated lumbar puncture, as did also the weakness of the face and eye muscles. The patient left the hospital greatly improved, and subsequent examinations have shown her to be entirely well after several months.

CASE 10.—J. M., a girl, aged 12, seen, June 5, 1916, had had measles and scarlet fever some years before, and there was a history of an indefinite illness two months previously, with pain and swelling of the legs, and fever. She had been taken ill while at a dance late on the night of June 4 with headache and vomiting, followed very quickly by unconsciousness. June 5, she was semistuporous. There was stiffness of the neck and a positive Kernig sign. The patellar reflexes were absent; the pupils were unequal. The pulse was 84 and regular and the temperature, 100 F. At lumbar puncture, 35 c.c. of hemorrhagic fluid was obtained, and 20 c.c. of antimeningitis serum given. June 6, the patient was taken to Mount Sinai Hospital, where she died three days later.

Necropsy (by Dr. F. S. Mandelbaum).—The body was that of a poorly nourished young girl, showing marked rigor mortis and postmortem discoloration. There were no marks of injury on the body.

The skull was of normal thickness. The surface of the dura was normal in appearance. All the cranial blood sinuses were opened and found normal. Sphenoidal sinuses and both middle ears were opened and found normal. The internal surface of the dura was normal in appearance. The cerebrospinal fluid was normal in amount, and as it was mixed with blood from the necropsy, its characteristics could not be noted.

The brain was intensely congested and extremely bright red. Over its convexity were numerous small, bright red petechial hemorrhages. In the pia-arachnoid, at the base of the brain, especially over the pons, were great numbers of bright red, hemorrhagic areas from 2 to 6 mm. in size. The blood vessels were normal and contained fluid blood, but even the minute capillaries were congested and visible. Over the surface of the brain were two or three pale, miliary areas which had somewhat the appearance of tubercles. The brain was uniform in appearance and consistency. An attempt was made to aspirate the ventricles, but was unsuccessful. On section, the brain showed throughout the same extreme congestion noted on the surface; all the ventricles were normal, and the brain was otherwise normal.

Cultures from the brain showed *B. coli*. The smears were negative for tuberculosis. An inoculation, July 20, 1916, was negative for tuberculosis.

Smears with Gram's stain and diluted carbolfuchsin showed a moderate number of polymorphonuclears, but no organisms.

Microscopic examination of two sections of the cortex revealed a marked edema of the pia, and also a diffuse infiltration with red blood cells and few polymorphonuclears. There was a marked congestion of all the blood vessels of the pia and the brain. A moderate number of very small hemorrhages were found in the cortex. The hypophysis showed extreme congestion of the blood vessels and a small amount of colloid in some of the alveolar spaces in the pars intermedia and pars anterior. Acidophilic cells were very prominent and were present in great numbers; otherwise, the section was normal.

The Giemsa stain showed no bacteria.

In the cervical cord and pons, there was congestion of the blood vessels and the same type of inflammation of the pia-arachnoid as noted in the meninges of the cerebrum. No evidence of poliomyelitis was found. The diagnosis was acute encephalitis.

It will be noted that it was assumed at the necropsy that the blood in the spinal fluid was accidental. While a diagnosis of acute encephalitis was made, it is evident from a study of the report that the changes were more marked in the meninges than in the brain substance.

Cases 13, 26 and 28 were of interest:

CASE 13.—A girl, aged 15 years, gave a history of a similar illness nine years before, which had lasted about three weeks. She had another mild attack in 1915, and made an uneventful recovery. Two lumbar punctures were done, yielding 50 and 60 c.c., respectively, of slightly hemorrhagic fluid.

Case 26.—A man, aged 27, gave a history of a previous illness, not so severe, four years previously. His attack in 1918 was a severe one, with unconsciousness at the onset. The fluid was hemorrhagic at several punctures. He made an apparently complete recovery but died in a similar attack some years later.

Data in Thirty-Five Cases of Meningeal Hemorrhage

No	Year	Age	Sex*	Possible Cause	Outcome	Comment
1	1923	2 mo	♀	Not determined	Died	
2	1917	5 mo	♀	Epidemic meningitis	Died	
3	1918	9 mo	♀	Not determined	Died	Liver enlarged, jaundice
4	1912	22 mo	♂	Epidemic meningitis	Recovered	
5	1925	4 yr	♀	Mitral lesion and Streptococcus viridans septicemia	Died	
6	1916	5 yr	♀	Epidemic meningitis	Died	
7	1923	7½ yr	♂	Hydrocephalus, mitral regurgitation	Died	
8	1918	9 yr	♂	Not determined	Recovered	
9	1923	10 yr	♀	Mitral stenosis	Recovered	
10	1916	12 yr	♀	Not determined	Died	Necropsy finding reported
11	1917	12 yr	♀	Not determined	Recovered	
12	1917	14 yr	♂	Nephritis	Recovered	Died a month later with nephritis
13	1915	15 yr	♀	Not determined	Recovered	History of similar illness 9 years before
14	1918	16 yr	♂	Pneumonia	Recovered	
15	1919	17 yr	♀	Not determined	Died	
16	1923	18 yr	♂	Not determined	Died	Necropsy: pachymeningeal internal hemorrhage
17	1917	19 yr	♀	Not determined	Recovered	
18	1925	19 yr	♂	Not determined	Recovered	Severe electric shock year ago
19	1914	20 yr	♂	Not determined	Died	
20	1924	20 yr	♀	Not determined	Recovered	History of epidemic meningitis 10 years ago
21	1918	20 yr	♀	Epidemic meningitis	Recovered	
22	1917	21 yr	♂	Syphilis	Recovered	Sent to State Hospital
23	1915	22 yr	♂	Blood pressure, 190 systolic	Died	No focal symptoms pointing to cerebral hemorrhage
24	1914	22 yr	♀	Endocarditis	Died	
25	1924	24 yr	♀	Struck head in taxicab, but no external mark	Recovered	
26	1918	27 yr	♂	Not determined	Recovered	History of previous attack 4 years ago; died in similar attack some years later
27	1924	27 yr	♂	Not determined	Recovered	
28	1915	30 yr	♂	Not determined	Recovered	History of 2 previous attacks, mental deterioration after second and third
29	1917	34 yr	♀	Not determined	Recovered	
30	1919	36 yr	♂	Not determined	Recovered	
31	1925	36 yr	♀	Not determined	Died	Necropsy showed hemorrhage in right ventricle
32	1920	40 yr	♀	Not determined	Recovered	
33	1923	46 yr	♂	Not determined	Recovered	
34	1923	48 yr	♂	Not determined	Died	Necropsy showed hemorrhage in left ventricle and around circle of Willis
35	1925	50 yr.	♀	Not determined	Recovered	

* In this column, ♂ indicates male, ♀, female

Case 28.—A man, aged 30, seen in June, 1915, had had a similar attack eighteen years before, from which he had recovered completely, and a second, five years before, which was followed by some mental impairment. The attack in 1915 was only moderately severe, and he recovered so far as his physical condition was concerned, but the mental impairment had apparently increased.

While realizing that it is possible that these other attacks were different in origin, it seems reasonable to assume that they were of the same nature.[7] If they were, the possibility suggests itself that they represented stages in the development of pachymeningitis interna hemorrhagica. It will be recalled that, on necropsy in this condition, there are often several layers in the false membrane beneath the dura, showing successive episodes in its formation.

It will be noted in the table that in four cases the meningeal hemorrhage accompanied an attack of epidemic meningitis; in four cases, a cardiac lesion; in one, pneumonia; in one, syphilis; in one, nephritis, and in one, high blood pressure. In the great majority of cases, however, no cause could be determined. Froin[8] gives a long list of conditions that may be the underlying causes of spontaneous meningeal hemorrhages. I stated in Tice's Practice of Medicine: "When we see so many conditions given as the cause of an occurrence, and when we remember that these conditions exist in the vast majority of cases without this occurrence taking place, it seems evident that the real cause must lie elsewhere, perhaps in some inherent weakness of the blood vessel in the individual cases in which meningeal hemorrhage occurs." Meylahn[9] concludes that spontaneous meningeal hemorrhage is nearly always a diapedesis. The causes of such an occurrence are disorders in the function of the vascular nerve apparatus. These vasomotor disturbances can be the result of diseases of the blood vessel walls. In that case, however, there must be assumed a previously existing constitutional weakness of the vascular nerves.

Weil, Isch-Wall and Pollet[10] call attention to the existence of blood lesions, analogous to those of hemorrhagic conditions, existing in certain patients with meningeal or cerebral hemorrhage. There is an increased bleeding time; coagulation is retarded, and the clot is less retractile and easily dissolves. The importance of this from a therapeutic standpoint is obvious.

The most important measure in treatment is lumbar puncture. Guillain warns against withdrawing too much fluid early in the illness. The lumbar puncture should be repeated daily, or less often, depending on the clinical symptoms. In most of our cases, it was followed by improvement. In many of our cases, horse serum, in the form of antimeningitis serum, was injected intraspinally early. This may have had a favorable influence on the hemorrhage. Certainly when the bleeding and coagulation time are increased, measures should be taken to correct these conditions of the blood.

It will be seen from a study of the table that twenty-one of our thirty-five patients recovered from the meningeal hemorrhage, although one died of nephritis a month later.

Meningeal hemorrhage is certainly a most interesting condition and one that warrants much further study.

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[8] Froin: These de Paris, 1904-1905.

[9] Meylahn: Deutsch. Ztschr. f. Nervenh. **78**: 78, 1923.

[10] Weil, P. E., Isch-Wall and Pollet: Bull. et mém. Soc. méd. d. hôp. de Paris **48**: 324 (May) 1924.

Research and Clinical Observation.—The very prevalent and unfortunate use of the word research as the equivalent of laboratory methods and laboratory results tends to belittle the importance of clinical observation, and is undoubtedly responsible for the general impression that when the young graduate commences general practice he relinquishes for good all opportunity of furthering the advance of medicine.—Bramwell, Edwin: *Lancet* **1**:268 (Feb. 7) 1925.

THE PRECIPITIN REACTION

IN THE DIAGNOSIS OF SCARLET FEVER AND ALLIED HEMOLYTIC STREPTOCOCCUS INFECTIONS *

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Important as previous studies on hemolytic streptococci as a cause of scarlet fever may be, especially immunologic studies, convincing proof of etiologic relationship of hemolytic streptococci to scarlet fever was lacking until the Dicks produced the disease in human volunteers with pure cultures of this organism.[1] They have also developed a presumptive susceptibility test by the intracutaneous injection of filtrates of cultures containing the specific toxin,[2] a method of active immunization[3] and of producing an antitoxic serum in the horse, and a procedure for identifying scarlet fever streptococci through the neutralization of toxin in vitro with the serum of convalescents from scarlet fever and experimentally produced antitoxic serum.[4]

Indeed, the problem of scarlet fever appears solved, yet the question of relationship of scarlatinal streptococci to other streptococci and the reason for the occurrence of epidemics remains unanswered. In epidemics of scarlet fever, as in other epidemic diseases due to streptococci, marked differences are noted, not only in general virulence but in the acquirement of particular infecting power by the streptococci, manifested, for example, by the high incidence of complications, such as otitis media, or nephritis in certain epidemics and not in others. Epidemics of what we now consider scarlet fever nearly always occur when hemolytic streptococcal infections of the throat and tonsil are prevalent, both in persons who have had scarlet fever and in those who have not. In fact, certain clinicians have come to regard many of these associated infections of the throat as scarlet fever without rash, because, aside from the rash, the symptoms, course and incidence of complications are so similar. My own studies in scarlet fever have been made chiefly from the standpoint of the more general problem of specificity (acquired or otherwise) of streptococci in the etiology of disease, and I have reported recently on the diagnostic value of a precipitin reaction between cleared suspensions in physiologic sodium chlorid solution of throat swabbings, and an immune scarlatinal horse serum prepared seven years before.[5] Moreover, through neutralization and absorption experiments, I have demonstrated the identity of the toxin (within the bacterial bodies and free in broth) produced by scarlatinal and by certain nonscarlatinal strains of hemolytic streptococci. This fact is believed to have important bearing on the genesis of scarlet fever, since it suggests that scarlatinal hemolytic streptococci are related to other hemolytic streptococci, and that specificity may be an acquired property, a phase perhaps in the life cycle of the streptococcus.[6]

I shall report here studies on the value of the precipitin reaction in the diagnosis of scarlet fever, on the virulence and toxin-producing power of hemolytic streptococci isolated from throats, infected wounds and dairy products during a recent epidemic of scarlet fever and allied throat infections, on the neutralization of toxin with scarlatinal immune serums, and on a comparative study of susceptibility to infection and sensitiveness of skin to toxin of hemolytic streptococci.

PRECIPITIN EXPERIMENTS

The immune scarlatinal serum, used in the experiments to be reported, was prepared in the horse (Horse 10) by repeated inoculation of hemolytic streptococci freshly isolated from the acutely inflamed throat in three typical cases of scarlet fever. The injections were made intravenously on three successive days each week from Dec. 19, 1917, to April 20, 1918. The initial injection consisted of the heated (56 C. for forty-five minutes) bacteria from 100 c.c. of glucose broth, suspended in 10 c.c. of sodium chlorid solution. The heat-killed organisms were injected during the first five weeks, and live bacteria during the remainder of the period of immunization. The dose was gradually increased until the organisms from 600 c.c. of broth were given at a single injection. The horse remained well until the latter part of March, when it developed arthritis which gradually increased until May 6, when it was bled to death under anesthesia. The serum used was obtained from this bleeding and from bleedings made April 8 and May 1. After the serum had been proved sterile, 0.2 per cent. tricresol was added, and the serum placed in amber bottles securely stoppered and kept continuously in the ice chest.

TECHNIC

I have found tubes similar to those used by Hektoen in his precipitin experiments very satisfactory in this study, as they were also in studies on poliomyelitis.[7] They are made from thin-walled glass tubing with an inside diameter of from 3 to 3.5 mm., cut into lengths of 3.5 cm., and sealed at one end. The capillary pipet used in adding the extract and serum is made from glass tubing of the same size, the capillary end being drawn to approximately 0.5 mm. outside diameter.

The swabs are made by wrapping absorbent cotton around the roughened end of a wire, preferably of aluminum, approximately 1.5 mm. in diameter, and bent to an angle of about 60 degrees. It is essential that the nasopharyngeal swabbing be obtained uncontaminated by contact with the tongue. The swab immediately or after it is kept in an empty sterile test tube and allowed to dry is placed in 2 c.c. of sodium chlorid solution or 0.2 per cent. gelatin Locke solution, and thoroughly agitated. The cotton is then removed from the wire with forceps, and as much as possible of the absorbed fluid is expressed by wrapping the cotton around the end of the forceps while pressing it against the mouth of the tube. The mixture is cleared by placing it in narrow centrifuge tubes, and centrifugalizing it at high speed.

The cleared supernatant fluid is then placed in the precipitin tubes with a capillary pipet, the end being placed in the bottom of the precipitin tube and enough of the fluid allowed to flow in to form a column about 1 cm. in height in the tube. An equal amount of serum is then added, the pipet again being plunged to the bottom of the tube, so that the serum lies beneath the extract. A single pipet is used for adding both extract and serum; it is rinsed three times with sterile solution

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to Scarlet Fever, J. A. M. A. 82: 265-266 (Jan. 26) 1924.

[3] Dick, G. F., and Dick, Gladys H.: Scarlet Fever Toxin in Preventive Immunization, J. A. M. A. 82: 544-545 (Feb. 16) 1924.

[4] Dick, G. F., and Dick, Gladys H.: A Method of Recognizing Scarlet Fever Streptococci by Means of Specific Toxin Production, J. A. M. A. 84: 802-803 (March 14) 1925.

[5] Rosenow, E. C.: A Precipitating and Neutralizing Antistreptococcus (Scarlatinal) Horse Serum, Proc. Soc. Exper. Biol. & Med. 22: 189, 1925.

[6] Rosenow, E. C.: Precipitating and Neutralizing Scarlatinal Antistreptococcus Horse Serum, J Infect. Dis, to be published

[7] Rosenow, E. C.: A Specific Precipitin Reaction in Epidemic Poliomyelitis, J. A. M. A. 84: 429-432 (Feb. 7) 1925.

of sodium chlorid between each different transference of extract and serum. The use of the capillary pipet is essential, as it secures a relatively slow rate of flow which can be controlled readily, and because a large pipet causes too much mixing of extract and serum at the zone of contact. It is, of course, essential that the extracts and serum be water-clear, or only slightly opalescent to transmitted light.

The tubes are incubated for two hours, when a reading is taken. They are then placed in the refrigerator over night, after which a second reading is made. The two readings usually agree. Proper illumination in making the readings is essential, and is best accomplished in a darkened room by transmitted light from below the shade of a strong electric light (a frosted bulb of from 75 to 100 watts), the eye being directed toward a dark background. The absence of a cloud at the zone of contact is recorded as a negative reaction, a slight cloud as +, a moderately heavy cloud as + +, a heavy, slightly granular cloud as + + +, and a heavy cloud with precipitation as + + + +. It is seldom that a stronger reaction than + + is obtained with nasopharyngeal extracts.

The epidemic studied occurred between Feb. 12 and May 12, 1925. Precipitin tests were made in twenty-nine patients in whom hemolytic streptococcus infection was demonstrated and in fifty-two normal controls, chiefly nurses. Seventeen of the patients developed their infection in the Kahler Hospital. One of these was a case of hematuria; the others were cases of exophthalmic goiter. One case occurred in each of three other hospitals in otherwise normal adults, the others chiefly in children in homes in different parts of Rochester. Fourteen of the twenty-nine patients manifested a scarlatinal rash and desquamation and were undoubted cases of scarlet fever, while ten showed no rash or slight erythema, so that diagnosis on clinical grounds was uncertain. Precipitin tests with the scarlatinal serum (Horse 10) at the onset were positive, and throat and tonsillar cultures revealed countless numbers of hemolytic streptococci in each of the fourteen patients with undoubted scarlet fever.

Repeated precipitin tests and cultures of nasopharyngeal swabbings were made at intervals throughout the course of the disease in seven cases. In one of these, hemolytic streptococci were isolated in large numbers and the precipitin test remained positive in each of five tests made over a period of ten days. In the other six cases, the precipitin test became negative in one or two weeks, as inflammatory reaction of the throat subsided. This was true even when cultures continued to yield large numbers of hemolytic streptococci. In three cases, the precipitin test became positive with the nonscarlatinal antihemolytic streptococcus serum as it became negative with the antiscarlatinal serum. In two patients whose cultures continued to show large numbers of hemolytic streptococci and who developed exacerbations associated with fever and glandular enlargement, the precipitin tests were positive with the antiscarlatinal serum at the onset, negative during the quiescent interval of eight and ten days, respectively, again positive during the period of exacerbation, and again negative during convalescence. In two cases of scarlet fever, the precipitin tests proved negative at the outset but positive a few days later as the throat infection became more marked, cultures in each instance showing large numbers of hemolytic streptococci.. In none of the fourteen cases was there a history of a previous attack of scarlet fever.

The Dick test was mildly or strongly positive at the time of the rash and negative during convalescence in each of six cases studied. One of these was a case of surgical scarlet fever in a youth, aged 15 years, who had been operated on several weeks before for empyema of long standing. Resections of ribs had left a large granulating, gaping wound. About one week before the tests were made he had a chill with malaise and high fever, but without sore throat; two days later a scarlatinal rash appeared, and still later, typical desquamation. The throat appeared normal, but the dressings of the thoracotomy wound were saturated with pus, the granulating surface was covered with thin grayish exudate, and the surrounding skin presented a large number of pustules. Precipitin tests were made of the cleared suspensions in sodium chlorid solution of the swabbing from nasopharynx, granulating wound, and pustules. Cultures of the nasopharynx proved free from hemolytic streptococci; those from the wound revealed countless numbers of typical colonies of this organism together with a moderate number of staphylococci, while those from the pustule revealed *Staphylococcus albus* only. The precipitin test with the material swabbed from the throat and pustule was negative, while that from the wound proved strongly positive. Skin tests with the filtrate of this hemolytic streptococcus proved positive in each of two susceptible persons. The serum obtained two weeks after the onset of the attack was found to neutralize the toxin in filtrates of known scarlatinal hemolytic streptococci.

Of the fifteen patients for whom the diagnosis of scarlet fever on clinical findings was uncertain, nine had typical attacks of follicular tonsillitis, with relatively slight affection of the throat and glands and little fever. Five had a more diffuse and more severe infection of the throat, associated with fever, lasting from two to seven days, while in one, a young lad, cellulitis followed injury of the skin over his knee at a time when his sister had scarlet fever. A culture of his throat was free from hemolytic streptococci and the precipitin test was negative, while that from the pus from the knee revealed countless numbers of colonies and gave a positive precipitin test. The precipitin test with the antiscarlatinal serum in the nine cases of mild throat infection proved negative, and hence these were not considered cases of scarlet fever. The Dick test was negative in two and positive in two. In the five cases of angina resembling that of scarlet fever, the precipitin test proved positive in all at the onset, and became negative in all during convalescence. The negative tests here, as during convalescence in the undoubted cases of scarlet fever, became negative before the hemolytic streptococci disappeared from the throat. Two of the five patients had had scarlet fever. The Dick test in both of these as in the other three was negative. The serum during convalescence of the two that had not had scarlet fever previously neutralized the toxin produced by streptococci from typical scarlet fever.

One of these cases was that of a man, aged 46, who was being treated for exophthalmic goiter. The attack began with severe aching and malaise, occipital headache, delirium, and great pain in the throat on swallowing. The patient was critically ill for a week, with high fever and enlargement of cervical glands, and then gradually recovered. Examination of the throat on the second day revealed marked swelling and redness of the tonsils, which were partly covered with a loosely adherent membrane, and extreme redness and edema of the uvula, pillars and pharynx. The tongue was heavily coated; the papillae were red and swollen. The swabs from the tonsils and nasopharynx, February 19 to 20, yielded countless numbers of colonies of hemolytic streptococci and a positive precipitin reaction with my old scarlatinal immune horse serum. The swabs taken February 25 and 26 also yielded countless numbers of hemolytic streptococci, but the precipitin tests were negative. The swabs taken March 4 were found free from hemolytic streptococci, and the precipitin tests were negative. The Dick test at the onset of the attack proved negative. No rash developed; desquamation was not observed. The patient had had scarlet fever during childhood.

The findings in one family are of particular interest. The nursemaid had severe tonsillitis associated with fever and illness, compelling her to stop her work and go home. She did not consult a physician. Thereupon her sister, who remained free from throat symptoms, substituted. About a week after the maid had fallen ill with tonsillitis, one of the children, a girl of 8, became ill with a typical attack of scarlet fever and a severe infection of the finger at the site of an accidental burn. Her brother had a streptococcus infection of the injured skin over the knee. The cultures from the tonsil of the maid who had had tonsillitis two weeks before, from the throat and infected finger of the girl and from the infected knee of the boy, revealed large numbers of hemolytic streptococci, and the precipitin tests were positive; whereas both cultures and precipitin tests were negative with swabs from the throat of the unaffected sister of the nursemaid, and the boy with the infected knee.

In no instance was a positive precipitin test obtained with the antiscarlatinal serum in which cultures did not show large numbers of hemolytic streptococci. The results in tonsillar and nasopharyngeal swabs made at the same time in six cases were the same in five and slightly different in two. In most cases, as typical hemolytic streptococci disappeared, a preponderance of slightly hemolytic streptococci supervened. The precipitin test in these with the antiscarlatinal serum was negative in every instance.

Table 1.—*Precipitin Reaction in Scarlet Fever, Follicular Tonsillitis, Diseases of the Nervous System and Normal Controls*

			Immune Serums, Incidence of Positive Reactions					
Source of Nasopharyngeal Swabs	Cases	Tests	Poliomyelitis, 26	Encephalitis, 59	Chorea, 23	Nonscarlatinal Antihemolytic Streptococcus, 19	Scarlatinal Antihemolytic Streptococcus, 10	Normal Horse
Scarlet fever	20	57	0	0	0	5	52 (91%)	0
Follicular tonsillitis	9	16	0	0	0	4	1 (6%)	0
Diseases of the nervous system	49	71	40	39	23	3	3 (3%)	0
Normal controls	109	119	5	8	4	2	2 (2%)	0

Of fifty-seven tests made early in cases of scarlet fever, with swabbings from the nasopharynx, ear or wound and with various immune serums (Table 1), negative results were obtained in all instances when the immune horse serums (prepared by injecting streptococci from poliomyelitis, encephalitis and chorea) and normal horse serums were used; five proved positive in the nonscarlatinal hemolytic streptococcus serum; while, with the scarlatinal antihemolytic streptococcus serum, a positive test was obtained in fifty-two instances (91 per cent.). Cultures showed the presence of hemolytic streptococci in each of the five negative tests, but the suspension was so turbid after centrifugalization, on account of material having been accidentally swabbed from the coated tongue, that a slight cloud may have been masked. In control experiments with several samples of scarlatinal antitoxic serums prepared by the Dick and Dochez methods, positive reactions were obtained only about one half as often as with my serum which was prepared by injecting dead bacteria and living cultures intravenously.

The tests in follicular hemolytic streptococcus tonsillitis indicate that the hemolytic streptococcus in this disease varies immunologically, although culturally indistinguishable, the test being positive three times out of ten with the nonscarlatinal antihemolytic streptococcus serum and only once with the scarlatinal antihemolytic streptococcus serum. The results in forty-nine cases of diseases of the nervous system such as epidemic encephalitis, chorea and spasmodic torticollis unassociated with hemolytic streptococcus infection, and in 107 normal persons, are self explanatory and serve as good controls over the results obtained in the cases of scarlet fever.

Precipitin tests and blood agar plate cultures were made also in nine cases of acute or subacute otitis media, following tonsillitis or scarlet fever, and in three cases of mastoiditis. The duration of the suppurative process ranged from one week to six weeks. The fresh exudate was obtained with swabs of absorbent cotton, and was then suspended in 2 c.c. of sodium chlorid solution and the cleared extract layered over the respective serums in the usual manner. Hemolytic streptococci were found present in variable numbers in all but two of the cases of otitis media and one of the cases of mastoiditis. Of the seven cases of otitis media which were shown to contain hemolytic streptococci in the swabbed material, two gave a positive ring test with the antiscarlatinal serum. One of the patients in the latter group had had scarlet fever several weeks previously; the other had not. The two cases of otitis media that reacted positively showed countless numbers of hemolytic streptococci, and the ear drums had been punctured ten days and two weeks previously, respectively. Neither of the patients had a rash, but both had severe infections of the throat. One was exposed to scarlet fever. In one of the negative cases of otitis media the patient had had scarlet fever two weeks previously, and the negative precipitin test was no doubt due to the fact that only relatively few hemolytic streptococci were present in the material swabbed. Two of the remaining five negative cases in which there were many hemolytic streptococci gave a positive precipitin reaction with nonscarlatinal antihemolytic streptococcus serum. Both of the cases of mastoiditis, in which there were many hemolytic streptococci, give a positive precipitin test with the antiscarlatinal serum. In one, the mastoiditis followed scarlet fever; in the other, there was a scarlatinal type of infection of the throat, but no rash.

VIRULENCE AND TOXIN PRODUCTION

In order to eliminate the difficulty in filtering the blood broth cultures used by the Dicks, and to avoid pseudoreactions due to foreign protein, I used for the most part the Douglas medium or tryptic digest horse muscle broth found so useful by Hartley[8] in the production of diphtheria toxin. The conditions were made as nearly alike as possible throughout the study. Growth in this medium is more rapid and more profuse than in ordinary broth containing a small amount of blood. Pure cultures from blood agar plates were inoculated in the previously warmed broth. All cultures were incubated for forty-eight hours at 37 C., when 0.2 per cent. phenol (carbolic acid) was added; they were then passed through bacterial filters. The filtrates were diluted with physiologic sodium chlorid solution on the day the injections were made. The thirty-seven filtrates tested represent thirty-two different strains of hemolytic streptococci and one strain of green-producing streptococci. Of the thirty-six prepared from cultures of hemolytic streptococcus, eight were obtained from seven cases of scarlet fever with rash, three from two cases of scarlet fever without rash, two from two cases of hemolytic streptococcal follicular tonsillitis, six from six normal controls, one from the wound of an infected knee, one from the throat in a case of acute chorea, and fifteen from dairy products. The toxin content of the thirty-seven filtrates was tested in two sets of experiments comprising six normal adult persons, and two young Chester-White pigs weighing 7 kg. each. The filtrates injected in man were diluted 1 : 500, those for the pig, 1 : 50. The injections of 0.1 c.c. into the skin were made as nearly alike as possible in all instances: over the forearm in man, and over the abdomen and thorax in pigs. The readings were taken at the time of maximal reaction; namely, twenty-four hours after injection in man, and eight hours in pigs.

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[8] Hartley, P.: The Value of Douglas' Medium for the Production of Diphtheria Toxin, J Path & Bacteriol. **25**: 479-486 (Oct) 1922.

Extreme variations were noted in the susceptibility of the skin of different persons. Thus, a man who had what was considered to be psoriasis was immune to all of eighteen filtrates injected, and a man of asthenic type reacted to only two of nineteen. Three were moderately susceptible, reacting each with ten filtrates, while one, a robust, muscular man, was highly susceptible, reacting more or less markedly to sixteen of the nineteen filtrates injected. The pigs were about equally susceptible. Marked differences were noted in reactivity to filtrates from different strains. The filtrates representing scarlatinal strains were most uniformly of high toxicity, although two exceptions were noted in four of the six persons and in one of the pigs. Marked differences were noted in the toxicity of filtrates produced by the same strain. In one instance the strain isolated from the throat at the height of the attack, when the precipitin test was positive, produced a toxin highly irritating to the skin of two of three men injected, whereas the toxin produced by this strain later, after the precipitin test had become negative, produced no reaction in these, but a marked reaction in another person. In another instance, the strain of hemolytic streptococcus isolated from cottage cheese failed to produce toxin when isolated but acquired this power after passage through animals.

Of eight strains isolated in scarlet fever with rash, four produced filtrates of high and four of moderate toxicity. Of three strains isolated in cases considered to be scarlet fever without rash, two producted filtrates of high and one of moderate toxicity. Of two strains isolated in follicular tonsillitis, one produced a filtrate of high and one of moderate toxicity. Of six strains of hemolytic streptococci isolated from the throats of six of fifty-two nurses (from the hospital in which the hemolytic streptococcal infections occurred), two produced filtrates of high, three of moderate, and one of no toxicity. Of the fifteen strains isolated from dairy products used in the hospital, seven produced filtrates of moderate or slight toxicity and eight of no toxicity. One strain isolated from the infected knee and one from the throat of a child with acute chorea produced filtrates of moderate toxicity. The toxicity of four filtrates was tested by injecting each into four nurses. Two of the filtrates were prepared from undoubted scarlet fever strains, one (homologous) from the hemolytic streptococcal infection of the nurse to be injected, and the fourth from a strain isolated in a sterile manner from the udder of a cow. The control injected consisted of diluted broth. Three of the nurses, according to toxicity tests, were carriers of scarlatinal hemolytic streptococcus, and one was a carrier of a nonhemolytic streptococcus. All had had attacks of sore throat from ten days to two weeks previously. Two had had scarlet fever and two had not. In three, the two that had not had scarlet fever and one that had had the disease, the reactions were all negative; while the second of those that had had scarlet fever reacted markedly to all but the filtrates prepared from the culture of hemolytic streptococci from the milk. Inflammatory reaction was absent in the throats of the controls at the times skin tests were made, as well as when the cultures were taken. The number of colonies of hemolytic streptococci was relatively small, and the precipitin test with scarlatinal serum was accordingly negative.

The virulence or infecting power of the streptococci used for toxin production was tested in twenty-nine instances. Rabbits were given intracutaneous injections of 0.2 c.c. of the twenty-four hour cultures; mice were given 1.5 c.c. intraperitoneally and 0.5 c.c. subcutaneously and white rats were given 4.5 c.c. intraperitoneally and 0.5 c.c. subcutaneously. The remainder of the culture was then incubated for twenty-four hours longer before being filtered. The virulence was considered marked if the skin of the rabbit showed marked reaction, and the mouse and rat died within forty-eight hours after injection; moderate if the skin reaction was of lesser extent and if either the mouse or rat survived or if they died late, and of slight or no virulence if only slight or no reaction developed in the skin of the rabbit and if the mouse and rat remained well. The virulence of nineteen strains was marked, of four moderate and of two slight, while four showed no virulence. Of the twenty-five strains that showed a certain degree of virulence, twenty produced a large or moderate amount of toxin and five a slight amount or no toxin. Three of the four strains that proved nonvirulent produced a moderate amount of toxin, while one produced none.

A comparison of the significance of the precipitin test and the toxin producing power was made in fifteen cases. In each of nine cases in which the precipitin test was positive, production of toxin by the corresponding strain was high. Five of these were cases of scarlet fever with rash, and four were cases of scarlet fever without rash. In four others with a positive precipitin test, the production of toxin was moderate or slight. Two of these were mild cases of scarlet fever with rash, one a case of surgical scarlet fever and one a case of acute chorea. In each of these cases in which the precipitin test was negative, toxin production was moderate or slight. In one case of scarlet fever without rash the production of toxin was high at the onset when the precipitin test was positive, and low during convalescence when the precipitin test had become negative.

NEUTRALIZATION EXPERIMENTS

The filtrates used in the experiment summarized in Table 2 were diluted with physiologic sodium chlorid solution to 1 : 250 for man and 1 : 50 for pigs. They were mixed with equal parts of the different serums, and the mixture was incubated for one hour before injection. Neutralization was practically complete by each of the serums for man and pigs.

Table 2.—*Neutralization of Toxin with Scarlatinal Immune Horse Serums and Convalescent Scarlet Fever Serum*

		Serums†			
		Scarlatinal Antihemolytic Streptococcus			
	Filtrate*	Rosenow Reaction	Dochez Reaction	Convalescent Scarlet Fever Reaction	Normal Horse Reaction
Case 1	1	0	+	+	++++
	2	0	+	+	+++
	3	0	0	0	++
	4	0	0	0	+++
	5	0	0	0	++
	6	0	0	0	0
Case 2	1	0	0	0	++++
	2	0	0	0	+++
	3	0	0	0	+++
	4	0	0	0	+++
	5	0	0	0	+++
	6	0	0	0	+
Case 3	1	0	+	0	++
	2	0	+	0	++
	3	0	+	0	++
	4	0	0	0	++
	5	0	0	0	0
	6	0	0	0	0
Case 4	1	0	+	0	+++
	2	0	+	0	+++
	3	0	+	+	+++
	4	0	0	0	+++
	5	0	0	0	++
	6	0	0	0	0
Pig 1	1	0	0	0	++
	2	0	0	0	++
	3	0	0	0	++
	4	0	0	0	++
	5	0	0	0	0
	6	0	0	0	0
Pig 2	1	0	0	0	++
	2	0	0	0	++
	3	0	0	0	++
	4	0	0	0	++
	5	0	0	0	0
	6	0	0	0	0

* Source of hemolytic streptococcus from which filtrate was prepared:
1. Throat, scarlet fever without rash, height of attack (Strain 267)
2. Throat, same case during convalescence.
3. Throat, scarlet fever with rash, height of attack (Strain 281).
4. Throat, normal control (Strain 341).
5. Milk obtained in sterile manner from cow (Strain 304).
6. Control, diluted broth.

† The degree of reaction is estimated on a basis of 0 to ++++.

SUMMARY AND COMMENT

Hemolytic streptococci of scarlatinal type, as determined by the precipition reaction, were demonstrated in the throat during the onset in fourteen cases of scarlet fever with rash and five cases of scarlet fever without rash; and hemolytic streptococci of nonscarlatinal type were demonstrated in most of these during convalescence and also throughout the attack in three cases of acute follicular tonsillitis. Moreover, according to this test, scarlatinal hemolytic streptococci were demonstrated in the tonsil of an adult who had had tonsillitis two weeks previously, in the throat and pus from an infected finger in a case of scarlet fever, and in the pus of an infected knee of a boy who did not have a rash, in the empyema pus in a case of typical surgical scarlet fever, and in cases of otitis media and mastoiditis. Virulence and the production of toxin were usually high in strains isolated from material that gave a positive precipitin reaction, and vice versa. The clinical findings in the throat and elsewhere in cases in which there was no rash, and in which the precipitin test was positive, were like those of scarlet fever, and in one of these, precipitin, toxin production and neutralization tests were all positive. Hence the precipitin reaction with suitable scarlatinal immune serums may be considered of value in determining the presence or absence of scarlatinal hemolytic streptococci in the throats and elsewhere, not only in scarlet fever but in other infections. Since the test is easily made and the results are obtainable quickly, and since it is positive at the very outset of the infection, it should prove of great value in determining the nature of the infection in the throat, ear and mastoid at the time of epidemics of scarlet fever, especially in persons who have had scarlet fever or who have presumably been rendered immune by the Dick method of injection of toxin. A positive precipitin reaction at the outset in cases of infection of the throat, suggestive of scarlet fever, whether the Dick test is positive or negative, and irrespective of any history of scarlet fever or prophylactic inoculations, should, in the light of these results, be considered tentatively to indicate scarlet fever and should lead to the institution of immediate precautionary measures and perhaps specific serum treatment. Since the precipitin test tends to become negative during convalescence before hemolytic streptococci have disappeared, the fact that not all strains of hemolytic streptococci from scarlet fever can be placed in one group by agglutination and agglutinin absorption tests does not necessarily militate against the specificity of the precipitin test, because it is performed with swabbings directly from the infected tissues, whereas the agglutinin tests have been made without much regard to the time in the attack at which they were isolated, or to the duration and character of artificial cultivation.

In view of the general agreement found between precipitin reaction tests for virulence and the production of toxin in the medium used, and the fact that neutralization of toxin was so marked both by the hyperimmune horse serum and convalescent scarlet fever serum, there is no good reason for believing that the use of the blood broth mediums, as recommended by the Dicks, would have given materially different results.

The Dick test was found to be a reliable index of susceptibility of the skin to rash. It was positive at the time of the attack and negative during convalescence in each case tested, but according to my experiments, immunity of the skin to rash and to injections of the specific toxin does not always run parallel to immunity of the throat, and so forth, to infection by scarlatinal hemolytic streptococci. Thus, five persons developed severe infection of the throat resembling that of scarlet fever, due, according to the precipitin test, to scarlatinal hemolytic streptococci, despite the fact that the Dick test was negative and rash remained absent. Two of these patients had had scarlet fever. The strain from one of the patients who had had scarlet fever was proved to be a scarlatinal hemolytic streptococcus by the precipitin test and by the Dick test; namely, production of toxin and neutralization of toxin by immune scarlatinal serum and convalescent scarlet fever serum. The serum of one of these patients obtained during convalescence had marked neutralizing power over scarlatinal toxin. On the basis of the results of these experiments it would appear that the supposed immunity to scarlet fever following an attack, and therefore perhaps following prophylactic inoculation, may mean chiefly immunity of skin and perhaps other tissues to toxin and not immunity of the throat and certain other structures to infection by true scarlatinal hemolytic streptococci. The occurrence of high fever, sore throat and otitis media without rash in the children of one family within a month following typical attacks of scarlet fever, which, according to the toxicity and neutralization test, was due to scarlatinal hemolytic streptococci in each case,[6] also supports this view. It is possible, of course, that a relative immunity to infection develops, which, however, may not be readily detectable clinically.

According to toxin production, scarlatinal hemolytic streptococci were isolated from dairy products, before pasteurization, used in the hospital where scarlet fever occurred, in seven instances. One of these strains, isolated in a sterile manner from the udder of a cow, was found virulent to rabbit, mouse and rat, and produced a moderate amount of toxin which was neutralized by scarlatinal immune horse serums and convalescent scarlet fever serum. The strains of hemolytic streptococci from patients with scarlet fever, and from the throats of nurses in more or less intimate contact with the disease, as well as those from allied infections, were found, with few exceptions, to be more virulent and better toxin producers than the strains isolated from dairy products.

These facts and the proof of identity of toxin produced by strains isolated from scarlet fever, and certain ones isolated from other sources, indicate strongly that specificity in scarlatinal hemolytic streptococci may be an acquired and temporary property.

SURGERY OF THE SUPRA-ORBITAL REGION *

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Most of the commoner disorders in the supra-orbital region arise from the eye or the frontal sinus and are handled by the specialists in these branches, so they will not be considered here. But there are many injuries and new growths that require in their treatment an intimate knowledge of the unusual anatomic features in this vicinity. Here we have, in close proximity, an important organ of special sense, the eye; a cavity lined by mucous membrane, the frontal sinus, and the brain, enclosed in its bony walls covered with modified skin and fascia.

ANATOMY

The foundation on which the tissues rest is the frontal bone. The supra-orbital margin forms the upper boundary of the orbit, and above it is the superciliary ridge, a dense bony structure protecting both the eye and the brain. The prominence of the ridge is frequently, though not always, in direct relation to the size of the sinus. The frontal sinus varies greatly both in size and in position. Its anterior wall is of cancellated bone, while the posterior wall is usually thinner but of more compact bone. It is lined with mucous membrane and communicates with the nose so that injuries involving the sinus are likely to be infected by bacteria from within as well as by the ordinary skin bacteria.

The frontal bone is covered with pericranium, subaponeurotic connective tissue, frontalis muscle and its fascia, superficial fascia and skin. Infection in the subaponeurotic connective tissue may be serious, but free drainage is easily established in this region. The frontalis fascia, superficial fascia, and skin are fused here and, as a result, suppuration in these areas does not tend to spread and wounds do not gape. Because of the rich blood supply, there is little danger of sloughing of injured tissues or skin flaps. Hemorrhage is likely to be profuse and persistent because the vessel walls cannot retract or contract. The important muscles are the frontalis, orbicularis oculi and corrugator supercilii, all of which are supplied by branches of the facial nerve. The blood supply is from the frontal branch of the superficial temporal artery, the angular branch of the external maxillary and the supra-orbital branch of the ophthalmic. This is important, for any of these may require ligation proximal to a wound. The veins are the supra-orbital, superior palpebral and anterior facial. The sensory nerves are the supra-orbital and supratrochlear branches of the fifth nerve. They are conveniently located for blocking by a local anesthetic or for alcohol injection to relieve chronic pain following the use of irradiation for malignancy. The lymphatics of the inner half drain into the submaxillary glands and those of the outer half into the glands in the parotid region, thence to those under the angle of the jaw; so infection here may produce edema over the bridge of the nose and in the parotid region, resembling mumps, with enlargement of the glands beneath the angle of the jaw.

The superficial fascia, which is very dense, contains little fat, so lipomas are rare. The fascial layers are thickened at the eyebrow. The outer end of the eyebrow is said to be a favorite situation for small dermoids, the result of inclusion of skin cells beneath the surface during closure of the orbitonasal fissure. These do not involve the skin, are beneath the fascia and may indent the bone. They do not move with the skin as do wens and other cysts.

INJURIES

Injuries may involve the soft tissues only or the bone and sinus as well. Blows over the sharp supra-orbital ridge may produce injuries resembling incised wounds. Injuries to the eyelids or eyebrows require careful attention because the resulting deformity may be very conspicuous, especially if there is interference with muscular action. General surgical principles apply, with certain modifications. If only the soft tissues are involved, all foreign matter and tissue that is hopelessly damaged are removed. The rich blood supply is favorable to damaged tissues, so it is best to be conservative. Strong antiseptics are seldom required and should be used with caution. All viable tissues are replaced as near their normal position as possible, but it should be remembered that the loose subcutaneous tissue of the eyelids allows great swelling and may increase the tension if sutures are placed too early. Plenty of drainage should be provided for the first twenty-four or forty-eight hours. Great care must be taken to locate and

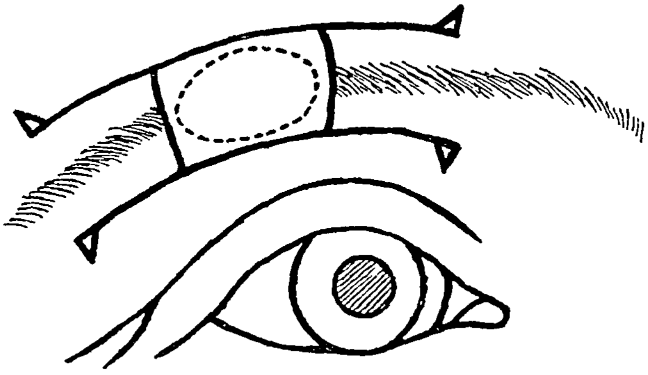

Fig. 1 (Case 1).—Incisions for removal of mole.

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* Read before the Section on Stomatology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

replace detached muscles of the orbit or lids and to match accurately the margins of the eyebrows.

Wounds involving the bone are often complicated by injuries to the eyeball or brain. If the anterior wall of the frontal sinus is fractured, emphysema and deep suppuration may be annoying sequels. Fragments of bone that are still attached to the pericranium should be replaced and will probably live. It may be advisable to enlarge the opening into the nose for better drainage, especially if the nasal bone is also fractured. Fracture of the bony wall of the orbit or detachment of the muscles may allow a surprising degree of displacement of the eyeball, and make it very difficult to find the usual landmarks. In such cases, early and accurate replacement of the fragments is necessary and difficult. Fractures of the anterior fossa of the skull may show late subconjunctival hemorrhage, ecchymosis or edema of the eyelids or the bridge of the nose. Gunshot wounds of this region are not uncommon, and they present many difficult problems, especially concerning the time and extent of operation. Penetrating bullet wounds eventually require operation in nearly every case, to remove fragments of bone, bullets or other foreign bodies. Immediate operation and search for foreign bodies are seldom indicated. These wounds, if involving only the frontal lobe of the brain, usually do not produce important focal signs, but pressure of extravasated blood or brain abscess may later do so.

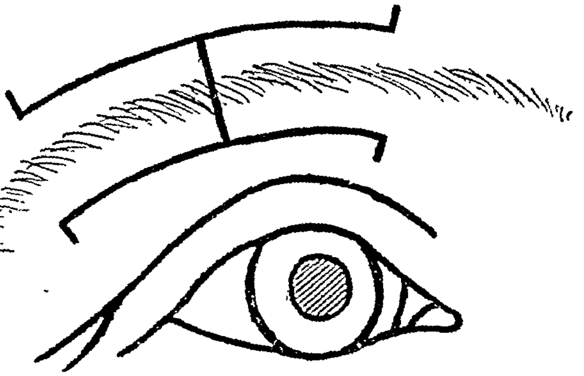
Fig. 2 (Case 1).—Method of suturing after removal of mole.

Gunshot wounds of the orbital wall may involve the eye and require enucleation. It is usually safe to wait several days before removing the eye and repairing the injury to the bony wall; but, if the bullet has remained in the orbit, it is better to remove the missile and the eye, if necessary, at once. Careful débridement and free drainage will shorten the time of healing and frequently obviate secondary repair.

COSMETIC SURGERY

We are occasionally called on to correct deformities or to remove scars or new growths in this region which do not interfere with function but are conspicuous because of their prominent location. Any irregularity of the eyebrow is very noticeable. Loss of a part or the whole of the eyebrow may be improved by tattooing or by wearing an artificial hairy patch, but these are poor makeshifts and usually unsatisfactory. If the defect is large, it is best repaired by hair-growing skin in the shape of a pedicled flap or Wolfe graft from the scalp, care being taken to have the hairs grow in the proper direction in their new location. When removing scars or growths, it is better to use a full-thickness skin graft than to close the flaps under too much tension. The grafts do very well here because of the rich blood supply. If tension and stretching are unavoidable, it is better to have the tension in a horizontal direction, since this does not raise the eyebrow or smooth the wrinkles of the forehead, both of which are very noticeable. A shortening of the eyebrow is much less conspicuous than narrowing or a change of elevation.

New growths in this area are common, especially in the outer third of the eyebrow. Because they are conspicuous, they usually come to operation early. Most of them are easily removed, under local anesthesia, through an incision within the limits of the eyebrow. Small dermoids may occur beneath the deep fascia; wens and other cysts are common. I have seen a number of large, hairy pigmented moles in the outer third of the eyebrow, and their removal may require the cutting of quite extensive skin flaps. Flaps from the forehead are frequently used in rhinoplasties and other replacements, but the scars are quite conspicuous and skin should not be taken from this region except to correct a disfigurement more noticeable than that which will be produced by the resulting scar.

When large defects of the bone are to be replaced, it is best to use bone, cartilage, fascia or fat from the patient himself whenever possible. Depressed fractures of the anterior wall of the frontal sinus are very satisfactorily corrected by fat grafts. Extensive cranioplasties are seldom required in this region. When the injury involves the sinus, the posterior wall is seldom fractured, and when the time comes for repair, it is usually found that the sinus is closed off from its normal communication with the nose, which makes the problem of repair easier.

It is a common observation that similar cases tend to appear in groups, and so it was my experience to have, within a short time, a number of patients with lesions above the eye. The cases reported here illustrate some of the common conditions and the methods that have been found satisfactory in treating them.

REPORT OF CASES

Case 1.—A raised, hairy, pigmented mole measuring three-fourths inch in diameter was located in the outer third of the eyebrow, almost entirely within its limits (Fig. 1). Under local anesthesia, two horizontal incisions 2½ inches long were made, and a square containing the mole was removed. The two horizontal flaps were undercut and approximated. Small triangles were removed at the ends of the incisions to avoid puckering. The edges were carefully sutured (Fig. 2). The result was excellent, and six months later, only slight shortening of the eyebrow was evident. The tension being in a horizontal direction, there was no change in the forehead wrinkles or the level of the eyebrow.

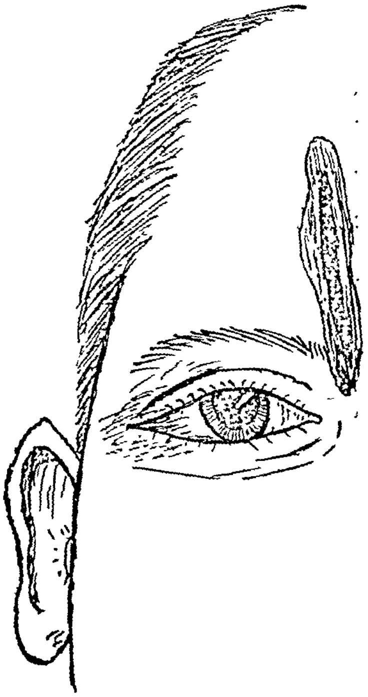
Fig. 3 (Case 2).—Adherent scar and depressed fracture of anterior wall of frontal sinus.

Case 2.—A marine, injured by a machete in the hands of a Filipino, had a vertical cut extending upward from the eyebrow, breaking in the anterior wall of the frontal sinus and leaving a depressed scar (Fig. 3). Suppuration continued for two months, and two operations were done for removal of necrosed bone. The patient came into my hands eight months after the injury.

Under local anesthesia, the scar was excised and the sinus was found to be closed off from its connection with the nasal cavity. A mass of fat from the abdominal wall was inserted and the skin closed over it. One year later, the scar was almost invisible, and the contour of the forehead and eyebrow appeared normal.

Case 3.—A marine, shot in an altercation with a bootlegger, had two buckshot penetrate the eyelid and eyeball, remaining in the orbit. Two lodged in the frontal sinus and one in the maxillary sinus.

Thirty hours after the injury, under general anesthesia, an incision was made within the limits of the eyebrow, a flap was raised and the sinus opened, the two buckshot were removed and the sinus closed without drainage. The eye was enucleated. Clean healing followed. After a suitable artificial eye had been fitted and the eyebrow had grown again, no evidences of injury were visible. The shot in the maxillary sinus caused no trouble, and a roentgenogram taken sixteen months later showed it to be fixed in its position.

Case 4.—A young woman was shot with a 0.45 caliber pistol held close to the right temple. The bullet entered at the outer end of the eyebrow, passed laterally, shattering the orbital plate of the frontal bone, ruptured the eyeball, and lodged in the cortex of the left frontal lobe of the brain. The skin wound was a ragged three-limbed laceration with a third degree burn in the center.

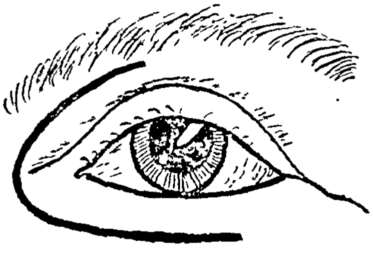

Fig 4 (Case 5).—Heavy line shows extent of the laceration

After the shock had subsided, the wound was debrided and the deeper parts cleaned with a suction syringe. A profuse flow of meningeal fluid and pus persisted for several days. Three weeks from the time of injury, the bullet having been localized by the roentgen ray, it was removed by trephining the left frontal bone through an incision above the hair line; the right eye was enucleated, and several fragments of necrotic bone were removed. The three lines of the original laceration were excised, and the flaps thus formed were approximated. Seven weeks from the time of the injury, the wounds were healed, a glass eye was fitted, and there was no evidence of injury except a small scar and slight ptosis of the upper lid.

Case 5.—A boy, aged 5, was knocked down by a bicycle. The pedal of the bicycle caught under the supraorbital ridge of the left eye. There was a laceration, down to the bone (Fig. 4), along the orbital margin from the supra-orbital notch to the inner canthus, and around to the middle of the inferior orbital margin, with detachment of the orbicularis; also fracture of the nasal bone and of the cribriform plate of the ethmoid, with severe concussion. There was a laceration 2 inches long above the left eyebrow.

The primary treatment consisted of cleaning the wounds and treating the shock and concussion. Forty-eight hours later, under general anesthesia, an examination was made, and the eyeball was found intact. The lacrimal duct was badly torn. The orbicularis and skin were returned to their proper positions and sutured there. A drainage tube was inserted into the nose through the space left by a missing piece of the nasal bone. Profuse suppuration followed, draining freely into the nose while the superficial tissues healed nicely. Twelve days after the injury, he was discharged from the hospital with the skin wounds healed, vision 10/20 and normal range of motion of the injured eye, some ptosis of the upper lid, and a purulent discharge which drained into the nose.

Three months later, the ptosis of the upper lid had considerably increased, because of scar contraction about the inner canthus. Under ether, the scar tissue was excised and the canthus freed. The skin edges were carefully approximated so as to leave no raw surface. After healing, there was very fair movement of the lid, but a slight purulent discharge continued, draining into the nose.

ABSTRACT OF DISCUSSION

Dr. Vilray P. Blair, St. Louis: I never have seen those dermoids mentioned in the literature, but this is an exact picture of the dermoids above the eye. The preservation of bone in these injuries of the face is of tremendous importance. It is not uncommon for a man who first attends them to pick out a bone carefully that may be difficult to replace later. If the supra-orbital or infra-orbital ridge, or the arch of the frontal bone, is allowed to heal in malposition, and then one is asked to repair it, one may have more trouble than one knows how to rectify. If the supra-orbital ridge and the vertical plate of the frontal bones have been removed, it is worse to hold out the soft tissues and get normal contour; one cannot bring the brain forward, and one has to keep working in grafts to fill the dead space. A Wolfe graft of the eyebrow is a good way of doing it, probably not as good as a flap graft in the final result; but, on the other hand, it does away with the forehead scars. In studying these Wolfe grafts, an observation has led me to believe that the hair must come from the superficial part of the epithelium, because if a blister forms and epithelium is lost, it may heal perfectly smoothly, but no hair will grow in that spot. The hair that is in the transplant always comes out. If a little skin with the brow is desired, one can get hair-bearing skin and skin without hair from behind the ear which makes nice material for the eyebrow and the lid at the same time. I generally put a Wolfe graft on when I take a flap away from the forehead, as Dr. Johnson recommended, yet I am not sure that this is best. If there is time and one wants to get the best possible cosmetic result, one can make the vertical flap that he spoke about, which is usually large enough for a great many kinds of repairs, and then instead of grafting it, let it granulate and heal over, skin that off and put on a Thiersch graft. The result is better than with the average Wolfe graft.

Dr. Robert H. Ivy, Philadelphia: In the restoration of the eyebrow I have had very good results by using a pedicle flap from the edge of the scalp, and I feel more confident of, having a successful take that way than by a free full thickness graft. The direction of the hair in this region from which the flap is taken seems to be very suitable when transplanted to the eyebrow region, and the incision along the edge of the hair does not seem to leave much of a scar after healing has occurred. Frequently the hair is shed from the distal end of the flap, shortly after it is brought down, but in a week or two it grows again and the patient has to keep the hair trimmed.

Juvenile Delinquency and Epicritic Control.—Experience in juvenile delinquency teaches that in many of the cases the basic causal factor is a regression to an earlier period of childhood, whereby a mental conflict is solved. There is, in other words, a suppression of epicritic control. It would therefore appear reasonable to suppose that the lesions in encephalitis, whatever their precise histologic character, lead to a reduction of this epicritic control, which may be compared with the geological process of denudation whereby the younger sedimentary rocks are removed by the action of the various physical agents, leaving bare the ancient primitive rocks on which they have been deposited. The tendency to an obliteration of the distinction between "meum" and "tuum," the all-or-none type of irritability, the complete disregard of the interests of others, manifested in the nocturnal orgies of singing and shouting, together with the failure of self criticism, seem characteristic of a protopathic condition.—Auden, G. A.: *J. Ment. Sc.* **71**:657 (Oct.) 1925.

AUTONEPHRECTOMY

ANIMAL EXPERIMENTATION, WITH REPORT OF AN UNUSUAL CASE*

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AND
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Autonephrectomy is essentially an occluded renal tuberculosis, and although in our experimental work we have been dealing to a certain extent with pyogenic organisms, some German and French schools hold various views concerning the aspects of the pathologic conditions existing. Yet, one cannot find in the literature any case in which pyogenic organisms are the sole *causative factor in the walling off of the kidney with* the pelvis and the ureter so that these structures remain enclosed for any period of time.

In reviewing the literature, Caulk,[21] in 1915, reported seven cases and read the most comprehensive paper on autonephrectomy presented in this country. Pardoe[22] reported twenty-one cases, and five cases presenting completely walled off lesions. Keys,[23] in a case of seventeen years' duration, showed a completely destroyed kidney at necropsy. Heitz-Boyer[24] reported a case of closed left kidney, and cited another case of a patient supposed to be cured of renal tuberculosis for twelve years. This patient later had a swelling in the loin, and eight years after the swelling appeared, consulted a physician, and on nephrectomy there was found a totally destroyed caseous kidney.

Then, in 1921, Caulk[27] reported sixteen autonephrectomies out of ninety-seven cases of nephrectomy for tuberculosis. He showed that some men believed that there was a possibility of spontaneous healing, yet in all of the cases of his series, tuberculous activity could be demonstrated. He pointed out that while the bladder symptoms may often be considerably ameliorated by *renal isolation, yet he never saw one case in which they* were completely and permanently quiescent. He felt that all cases were prone to exacerbation and always demanded surgical intervention.

There has been much written on autonephrectomy since Zuckerkandl cleared up the clinical significance of the closed tuberculous kidneys, and though there is a bibliography appended to this article, we will mention only a few of the recent writers, including Caulk. Probably the most comprehensive modern article written in Europe is that by Alois Wolff on enclosed cavernous renal tuberculosis, in which he reports nine cases and reviews the literature of this "spontaneous nephrectomy." In four cases described, the ureter was only intermittently obstructed and the kidneys were removed before the full clinical picture had resulted. In discussing Foley's paper on the "Diagnosis of Anomalous Renal Artery," W. H. Mayo said that, in Europe, some older surgeons reported at one conference patients being cured after passing tubercle bacilli in the urine for a time. The assumption was that though the patient had tuberculous kidneys, he had entirely recovered. Dr. Mayo pointed out that there had been no cystoscopic examination, and his inference was that, in these several reported cases, the respective kidneys were dead on the affected side; that is, "closed kidneys without function, but still tuberculous."

TABLE 4.—*Summary of Autonephrectomy Experiments in Rabbits*

	Operations																	
	First Group										Second Group							
Type of Autonephrectomy Produced	Injection of 1 C c Tubercle Bacilli in Right Ear Vein	Injection of 1 C c Tubercle Bacilli in Parenchyma	Injection of 1 C c Tubercle Bacilli in Pelvis and Ureter	Injection S aureus 1 C c, in Ear Vein	Injection S aureus in Parenchyma	Injection S aureus in Pelvis	Ligation Artery	Partial Ligation Artery	Ligation Ureter	Other Traumatism of Parenchyma	Removal Artery Ligation	Removal Ureter Ligation	Injection of 1 C c Tubercle Bacilli in Ear Vein	Injection of 1 C c Tubercle Bacilli in Parenchyma	Injection of 1 C c Tubercle Bacilli in Pelvis	Injection S aureus in Ear Vein	Injection S aureus in Pelvis	Total Number of Rabbits
Caseated cavernous		2	.				4	5	12		6	6	6	1	.	..	..	12
Pyonephrosis .	6		4			.		4	6	10	4	2					10	10
Atrophic sclerosis	6						6	..		6	6		6				..	12
Hydronephrosis	4		4						10		2	2			2	.	..	10
Number of lesions produced............ ..	3	1	..	2	1	2	.		1	1		1		2		1		4
General miliary tuberculosis .	2						..	.	2					2		.	.	2
General pyogenic infection		.		3			2		1		1	1				.	..	3
Died, cause unknown		2	.			2				2						..		2
Died from anesthetic																		0

In this table the four types of autonephrectomy mentioned above were produced. The various types of pathologic processes depended on the type, time and site of injecting the infective bacteria, as well as on the ligation of the ureter and artery and trauma of kidney tissue.

CLASSIFICATION

In reviewing the literature, it will be noted that several types of tuberculous involvement of the kidney are mentioned as causative factors in the production of autonephrectomy. The question now arises, How many types of tuberculous involvement will be found with enclosed renal lesions and which are the more frequent types of infection? One school divides tuberculous involvement of the kidneys into six types: (1) miliary; (2) nodular tuberculosis; (3) ulcerocavernous; (4) tuberculous pyonephrosis; (5) tuberculous hydronephrosis, and (6) tuberculous nephritis.

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* A general discussion of the literature will be found in the Transactions and reprints.

* From the Department of Urology and the Hooper Foundation for Research, University of California Medical School.

* Read before the Section on Urology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* Because of lack of space, this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the authors' reprints.

[21] Caulk, J. R.: Occluded Renal Tuberculosis, Tr. Am. Urol. A. 9, 1915.

[22] Pardoe: Lancet, December, 1905.

[23] Keys: Tr. Am. Urol. A., 1914.

[24] Heitz: J. d'urol. méd. et chir. 2: 537, 1912.

[27] Caulk, J. R.: Renal Tuberculosis, J. Urol. 6: 97-113 (Aug.) 1921. Harbitz is cited in this article.

By adding one more type to the foregoing classification, namely, atrophic tuberculous sclerosis, and ruling out the miliary, nodular and tuberculous nephritis, we have in the four remaining types practically all the general classes of kidney lesions that are described by the various authors in their cases of autonephrectomy. To recapitulate, the various pathologic conditions found in the enclosed renal lesions from this review of the literature, in the order of their reported frequency, are: (1) ulcerocavernous tuberculosis; (2) tuberculous pyonephrosis; (3) tuberculous atrophic sclerosis, and (4) tuberculous hydronephrosis.

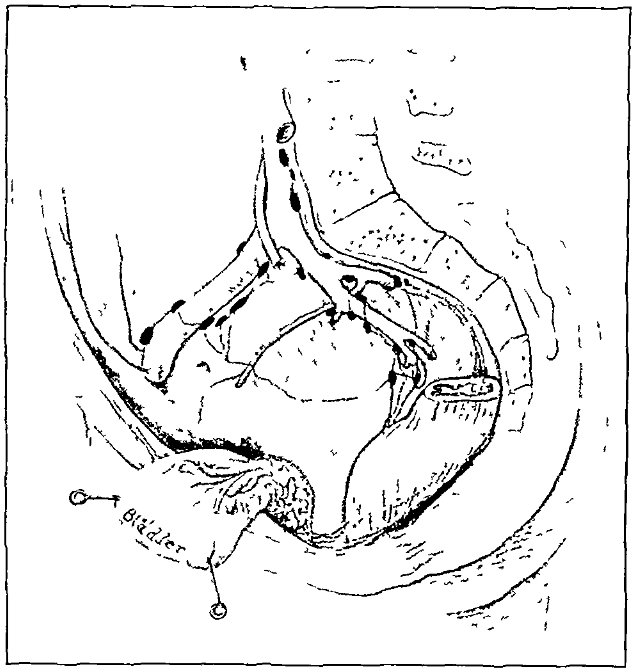

Fig 1.—Schematic drawing of lymph nodes of the bladder and prostate, showing the external iliac and hypogastric lymph nodes of the pelvis, all injected following injection of India ink at base of bladder

DEFINITION

Now, with these pathologic pictures in mind, what would be a comprehensive definition of autonephrectomy? Crabtree and Cabot[34] have said of kidney infections in general: "There is no subject in which there is so little uniformity of opinion and so much confusion. The literature of the subject is stupefying both in quantity and in complexity, and any one who has attempted to master it will be convinced of the fact that it is more likely to confound than to enlighten the reader." In the descriptions of autonephrectomy, the diseased kidney has been called by the various writers: "walled off," "enclosed lesion," "functionless," "closed ureter," "destroyed," "caseated cavernous," "dead," "closed tuberculous kidney" and "spontaneous nephrectomy." According to certain authors, not only must the kidney be destroyed, but the diseased tissues must contain no live bacteria, so that the kidney must be absolutely harmless to be considered a type of autonephrectomy. They quote Kurlow and Green to show that as long as there is caseation, one can find, by means of microscope and guinea-pig inoculation in the tissue, a possibility of further infection. But with the vast majority of writers on the subject, this is altogether too narrow a view, since a great many quote Zuckerkandl, who gave the name to this type of lesion. He showed that "induration of a tuberculous kidney and hardening of the parenchyma may be taken as a local recovery but never absolute," and that the enclosed kidney is always a present menace to the other, and removal is urgently recommended, so the type he had in mind was far from being sterile.

Another question that ought to be cleared up in giving a definition is whether tuberculous or pyogenic infections predominate in this type of kidney. Wolff logically sums up the discussion by stating that the tuberculous involvement outweighs all others, and, although he admits that the closing of the ureter may sometimes come from penetration of infected pus from the bladder, he closes the argument by offering these two comprehensive general classes of infection: (1) closed cheesy cavernous tuberculous kidney, in rare cases with the addition of a mixed infection, and (2) closed tuberculous pyonephrosis.

Three other points have to be kept in mind in rendering a definition. 1. Zuckerkandl and others have described cases of autonephrectomy in which the infection has penetrated the capsule and involved the perinephritic fat. 2. Many writers, including Caulk, have shown that only a portion of the kidney may be destroyed and enclosed while the remaining parenchyma may be healthy and functioning with an open ureter. 3. We are describing a kidney with patent ureter and pelvis with parenchyma separated from the pelvis and destroyed. With all these points in mind, we may find autonephrectomy as a primary enclosed tuberculous involvement of all or a portion of the kidney, with or without a superimposed mixed infection and with a ureter and pelvis either closed or patent.

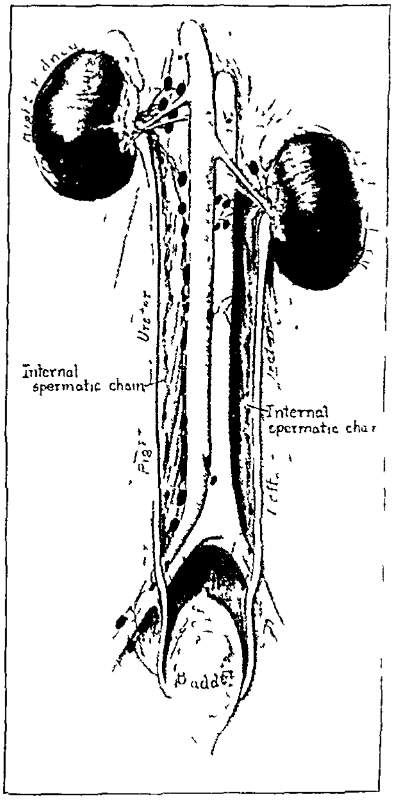

Fig 2.—Schematic drawing of lymph nodes from bladder to pelvis of each kidney, showing especially the internal spermatic chain of nodes that were injected following injection of India ink at base of bladder. This is a sketch taken directly from specimen by Mr. Sweet of the University of California.

ROUTES OF INFECTION

Hematogenous.—As to the routes by which bacteria pass to the kidneys to infect and produce hydronephrosis, the hematogenous has been generally accepted as the most common route. However, tubercle bacilli in the urine of a ureter are by no means a sure diagnosis of tuberculous infection of the respective kidney. That the pyogenic organisms and colon-typhoid group may pass through the unharmed kidney tissue has been shown, but there may be a superimposed mixed infection in the kidney that already has a tuberculous infection.

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[34] Crabtree, E. G., and Cabot, Hugh: Colon Bacillus Pyelonephritis, J. A. M. A. 68: 589-591 (Feb. 24) 1917; Boston M. & S. J. 174: 780 (June 1) 1916, Surg., Gynec. & Obst. 23: 495 (Nov.) 1916.

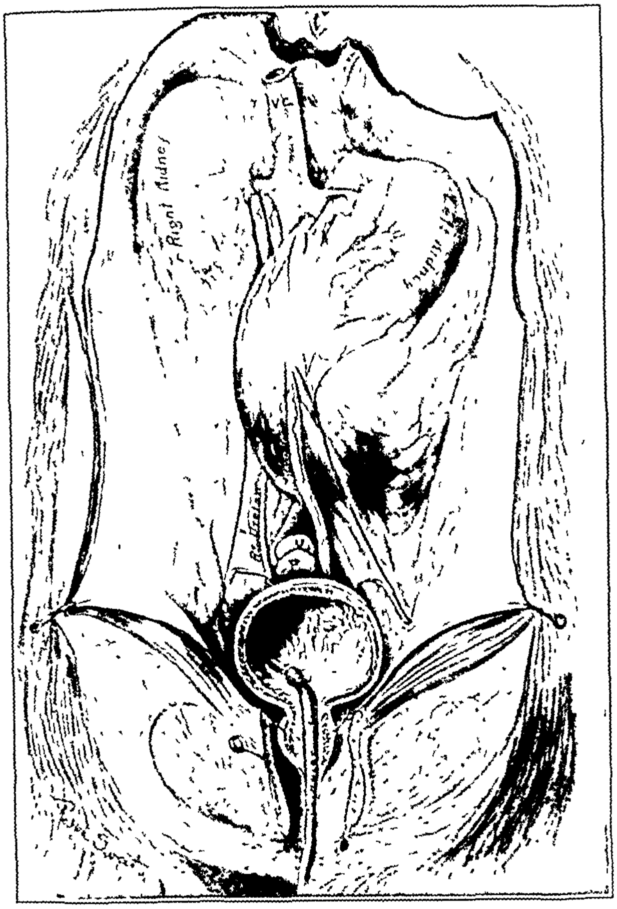

Fig. 3.—Direct extension from bladder to kidney of dog· The ureteral catheter is invaginated and tied into the urethral catheter in the bladder The right kidney with free outlet is normal The left kidney, with no outlet from the bladder, shows a definite pyonephrosis Experiment of seven days' duration.

This occurs more commonly than is supposed and is proved by the ingenious experiments of Marshall and Crane[48] and Dyke,[49] who showed by injecting the bacteria in a rabbit's ear that these germs appear in the urine six hours later. Most observers, on finding no microscopic lesions, draw the conclusion that the bacteria have done no harm, yet the last named investigators have shown conclusively that, in the majority of cases, if the kidney tissue which excreted the germs is incubated for a period, numerous colonies develop in and out of the tubular epithelium. In our work reported below, experimenting on rabbits and dogs, we not only have corroborated the work of Marshall, Crane and Dyke, but also have proved that with the least possible damage to the kidneys, it is easy to infect them with tubercle bacilli and the pyogenic group by way of the blood stream. We did not use the colon group, since in animals the latter germs act differently than they do in man; namely, more like the pyogenic bacteria.

Ascending Infection by the Lymphatics.—Infection by the lymphatics goes hand in hand with the hematogenous route, since Sakata[50] and others have shown that, while the lymphatics of the upper ureter drain into the lymphatic system in the region of the kidney pelvis, the lymphatics of the lower ureter drain into those of the anatomic pelvis, and Sugimura,[51] in a series of twenty-one cases, showed that in the presence of acute cystitis the lower third of the ureter was constantly involved. Franke[52] has shown a lymphatic communication between the right kidney capsule and the adjacent ascending colon. Now in severe cystitis and especially in severe diarrhea, the bacteria engulf the lower lymph vessels, jump the protecting nodes, pour into the blood stream, and produce kidney lesions by the hematogenous route. By injecting India ink and 1 cc. of an emulsion of 1 billion live tubercle bacilli at the base of the bladder in an animal, we were able to trace with a strong magnifying glass and microscope the India ink and bacteria through the system of lymph nodes described by Sugimura[51] in the vicinity of the ureters to the pelvis of the kidney. Krenger[53] has also been able to trace lymphatics from the bladder to the kidney and produce renal infection.

Direct Ascending Infection by the Urinary Passages.—In discussing direct ascending infection, we find again among the investigators a considerable variance as to nomenclature, and what is meant. Several writers speak of ascending infection as extension from the upper ureter to the kidneys; others speak of extension from the lower ureter up to the pelvis, while the great majority refer to extension from the bladder. Now there is little question as to the extension from the upper ureter, while many writers disagree as to the possibility of an ascending infection from the bladder.

Now given a bladder, a ureterovesical sphincter and ureter all in healthy condition, with constriction in the region of the prostate, can infected urine in that bladder infect the kidney? Many writers quoted above have already said that the kidney could not be infected without first damaging the bladder wall, the sphincter and the ureter, which may take place after a considerable lapse of time. We have proved conclusively, we think, in experiments on dogs, the contrary to be true; namely, that the infected urine in the bladder will promptly produce a pyonephrosis, provided of course that the other kidney is functioning normally through a different channel. Thus it will be seen, in discussing

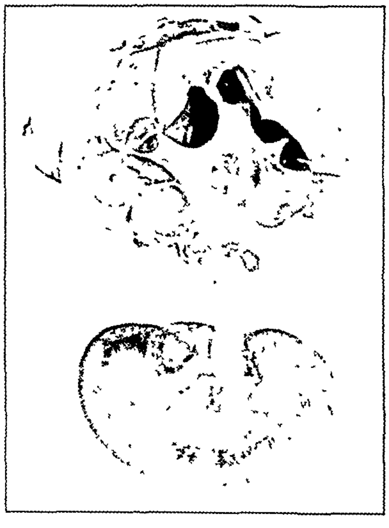

Fig 13.—Left kidney showing caseated cavernous condition, with right kidney about normal in appearance and size

existed. There may be a secondary infection occurring late that may so involve the diseased kidney substance as to mask completely the primary tuberculous involvement. Indeed, cases are reported with the remains of a kidney from one-fourth to one-tenth the normal size which may be bathed in a perinephritic abscess. The distinctive microscopic feature of this type is the connective tissue formation and calcification, which processes resulted from absorption of the preexisting caseation. There are various other types in this atrophic group. In long standing cases, there may be complete absorption of liquid from the caseated cavernous and the tuberculous hydronephrotic types with complete collapse of the walls, leaving a collapsed sac with little or no caseated and calcified matter, and the sac may be bound down with caseated and fibrous adhesions, rendering it difficult or impossible to differentiate the kidney remnant.

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[48] Marshall, E. K., Jr., and Crane, M. M.· Influence of Temporary Closure of the Renal Artery on Amount and Composition of the Urine, Am J Physiol **64**: 387-403 (April) 1923

[49] Dyke, S. C: The Passage of Staphylococcus Aureus Through the Kidneys of Rabbits, J. Path. & Bacteriol. **26**: 164 175 (April) 1923.

[50] Sakata· Ueber de Lymphapparat des Harnleiters, Arch. f. Anat. u. Entwicklungskr **1**, 1923

[51] Sugimura Ueber die Beteiligung der Uretera und der akuten Blasenentzuendung, Virchows Arch. f. path. Anat. **206**, 1911.

[52] Franke: Etiologie der Koli Infektion, Arch. f. Anat. u. Physiol., 1910.

[53] Krenger: Centralbl. f. d. Krankh. d. Harn u. Sex.-Org., **14**: 229, 1903.

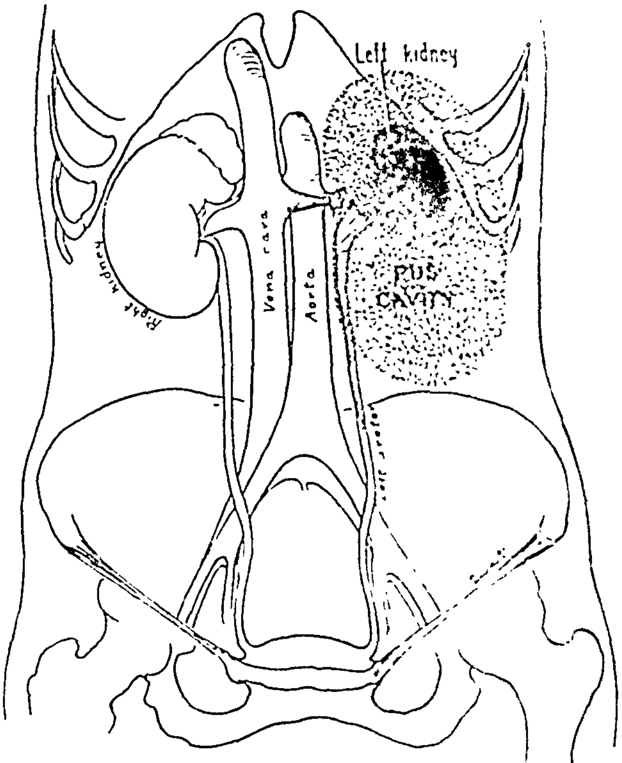

Fig. 24.—Schematic drawing of clinical case reported in Transactions and reprints, showing an autonephrectomy kidney about half the normal size bathed in pus and with the pedicle entirely separated

Tuberculous Hydronephrosis.—An early closing of the ureter from (1) direct extension upward from the bladder, (2) extension downward from the pelvis, (3) primary tuberculous involvement of the ureter, and (4) some obstruction other than tuberculosis in the ureter or below, will usually produce a hydronephrosis of the kidney that has only slight tuberculous involvement when the ureter becomes occluded. Thus, though no urine can pass through the ureter, there is practically no anuria, and the kidney continues to excrete, with the back pressure of urine being the main factor in the final picture. The largest types of hydronephrosis are seen with the obstruction of the ureter near the kidney, for when the ureter is closed near the bladder, the ureter above becomes a sort of "safety valve" dilated sac as does also the pelvis, and the damage and compression of the kidney parenchyma is not so complete, nor the kidney tumor so large. Venous engorgement first takes place with beginning hydronephrosis due to pelvic dilatation. With increased pressure, there is a thinning out of the renal parenchyma which is first seen in the lateral portions of the kidney, as shown by Hinman[62] in a series of ingenious experiments. According to this author, the sagittal median portion of the parenchyma is most resistant to the back pressure. The collecting tubules become dilated early with collapse of Henle's loops. The cause of the irregular nodulation of the hydronephrotic kidney surface is the early pressure atrophy of the collecting tubules that empty on the sides of the papillae, while those that open centrally "have a parallel course to the pelvic axis and remain dilated longest."[62] The glomeruli are the last to atrophy and even after ninety days' hydronephrosis, these structures may be seen clusteringly grouped in the median sagittal portion of the parenchyma. A kidney with tuberculous hydronephrosis may be of immense size, the largest of the four groups of autonephrectomy. Many such cases are reported in the literature and, for example, Sappington[25] reported one tumor of tuberculous hydronephrosis weighing 3,600 gm., or twenty times the normal size, and Braasch, of the Mayo Clinic, in a letter to Sappington, reported removing this type of tumor of similar size.[63]

COMMENT

This case[64] was undoubtedly a type of tuberculous atrophic sclerosis with calcification and connective tissue formation in the parenchyma. Superimposed was a staphylococcus infection which accounted for the perinephritic abscess, and also a colon bacillus infection. Our explanation for the final picture is as follows: Obliterative endarteritis began with the initial tuberculous infection of the pyramids. Some of the tuberculous infection probably extended to the pelvis, with beginning ulceration of the upper part of that cavity. With the superimposed *Staphylococcus aureus* infection which was probably in the beginning subcapsular, pressure from the enclosed pus in the region of the calices approximated the previously ulcerated pelvis walls, which, as we have shown in the case of the ureter, grew together and probably healed without further extension of the tuberculous process. The pus-pressure necrosis actually separated the pelvis from the parenchyma of the kidney, and the artery and vein, undergoing obliterative endarteritis, were probably separated from the kidney in the same manner.

This patient gave a typical "kidney" history. Five years previously, after a severe attack of scarlet fever, she had an attack of acute nephritis and from that time on was never robust and strong. With the markedly weakened kidney tissue, there was an ideal field for tuberculous infection. How long the kidney was walled off or dead is not known, but the process was advancing probably for years and was manifested in the eclampsia attack as well as the previous symptoms and run down condition of health with marked secondary anemia.

CONCLUSIONS

A comprehensive classification and definition of autonephrectomy has never been attempted up to the present writing, and although the literature is voluminous, discussions on the subject have been conflicting.

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FOR ORCHIDECTOMY

PIDIDYMIS AND TESTIS ARE
BY TUBERCULOSIS *

S VIVIAN, M D
IOLNIX, ARIZ.

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The most favorable case for its employment is one in which the patient is making a clinical arrestment of his pulmonary tuberculosis, but is being poisoned by absorption from a rapid development of the disease in the testis and epididymis

Barney found that forty-four of 100 testes removed because they were associated with tuberculous epididymides showed microscopic evidence of tuberculosis. All of these were cases of unilateral involvement. Is it not safe, then, to assume that microscopic involvement of the testis may take place early in genital tuberculosis?

It is not my purpose here to suggest that the testis be removed, when the involvement is only microscopic, for indeed the microscope is necessary for the diagnosis, and the gland should be conserved in the hope that by less radical surgery the burden of the patient may be lessened to the extent that he can overcome the involvement in the testis. But when this involvement in the testis has become macroscopic and the condition is still unilateral, orchidectomy is indicated for two reasons: first, because removal of the epididymis and vas deferens will not prevent dissemination of tuberculosis from a diseased testis by way of the blood or lymphatic streams; second, because removal of an actively tuberculous testis lessens the total of the load that the patient must carry.

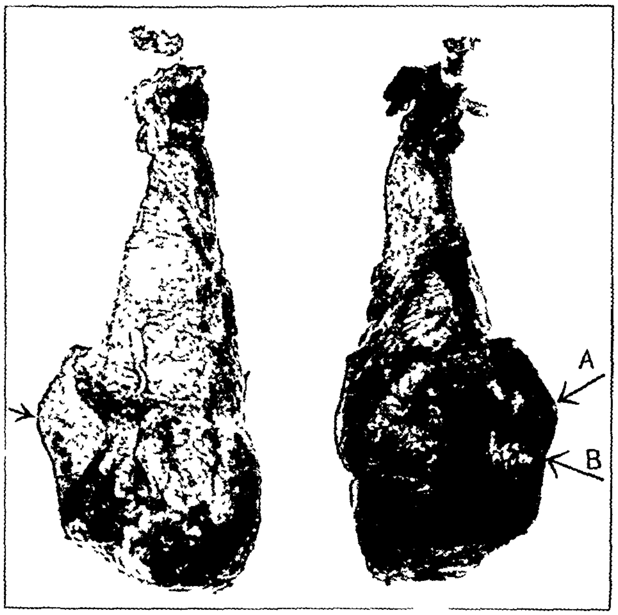

Fig 1.—The gross specimen, as removed intact, demonstrates that there has been no spilling of tuberculous material. The fact that the abscess, *A*, has been removed intact in the sinus bearing area of the skin, *B*, may be noted.

The extent of involvement at the time the patient presents himself determines the procedure of choice. Careful consideration of the patient's general condition by one whose entire effort is directed toward the care of the tuberculous is essential.

Advocates of epididymovasectomy may believe that all tissue requiring it can be removed by this operation

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these different routes of infection, that authorities differ on many questions, and we believe that considerable work will have to be done to settle many of the mooted questions.

SITES OF INFECTION

Primary Focal Infection.—The primary focus of the tubercle bacillus in the kidney is at the base of the pyramids in the region of Henle's loops.[59] Depending on the natural immunity that the patient may have, the tuberculous infection may remain localized in this region for years, and one may find here caseation, calcification and connective tissue formation. In patients of low resistance, the infection rapidly spreads, first in the pelvis, which is nearer than the cortex, and from the pyramids, extending along the tubules and by the lymphatics and possibly by the blood throughout the medullary and cortical portions of the kidneys.

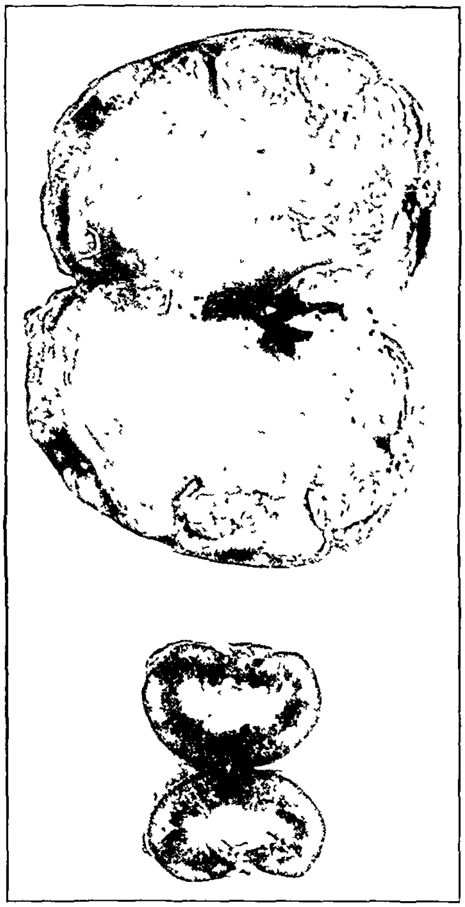

Fig 15.—Typical autonephrectomy (left) pyonephrosis. There is total destruction of the parenchyma, and the cavity is filled with cheesy matter and pus. The right kidney is about normal in size

Tuberculous Infection.—There may be an anatomic as well as a pathologic significance in the fact that at the base of the pyramids where the tubercle bacilli take first hold, the interlobar arteries bifurcate in the interlobular arteries and arteriae rectae. We are prepared to show that primary infection in the vicinity of this bifurcation produces a slight passive congestion of the circulation, which, in turn, is the cause of atrophic changes in the whole kidney of a beginning tuberculous infection. There are certain factors that may change this picture, such as early mixed infection and early closing of the ureter.

Bacteria in Mixed Infection.—Regarding the primary site of mixed infection, it has been shown by various investigators, notably Cabot and Crabtree, that the pyogenic group involves, first, the glomeruli and descending tubules, and also ascends by the lymph channels directly to the cortical surface. The characteristic lesions of these organisms are perinephritic abscesses, cortical abscesses, septic infarct and diffuse suppuration. The colon-typhoid group, on the other hand, after congregating in the collecting tubules, quickly break through into the pelvis, and their characteristic lesions are acute pyelitis, acute pyelonephritis, chronic pyelonephritis and pyonephrosis. It is interesting to note here that the pyogenic bacteria remaining in the vicinity of the renal capsule do not appear in the urine of a kidney so infected, nor does such an infection affect the phenolsulphonephthalein count to any degree, whereas the colon-typhoid group is found early in the urine, and on account of destroying areas of the medullary portion of the parenchyma, naturally, as may be expected, the phenolsulphonephthalein test is quickly lowered.

Primary Tuberculosis of Ureters.—That tuberculosis may be a primary infection in the ureters has been shown by various writers with reports of cases. The primary foci seem to start at the anatomic constrictions of the ureter, the one, near the pelvis, and the other, near the bladder. The way tuberculous ureteritis obliterates the ureter is that the tubercles proceed to ulceration. These ulcerated surfaces unite, cause a collapse of the ureteral walls, and finally grow together by connective tissue formation with absorption of the necrotic and caseous matter of the ulcerated areas, or the ureter may be closed from the healing of ringlike circular ulcers.

DIRECT EXTENSION

As for the direct extension of infected processes to the kidney or bladder, ulceration, of course, may take place anywhere along the course of the pelvis and ureter; but the most common sites are the naturally constricted portions of the ureter. Then cheesy masses of blood coagulum from the kidney may block the lumen with the former, causing ulceration and constriction, whereas the latter first may organize, and then cause ulceration and finally obliteration of the ureter. As mentioned above, under tuberculous infection of the ureter with ultimate closing of the passage, any form of constriction or obstruction of the urinary passages below may be a predisposing factor with tuberculosis in the kidney or bladder. If there is slow advancement of the tuberculous process, due to the unusual immunity of the patient, or if ringlike ulcers form in the ureter with healed stricture formation, there may be an intermittent opening and closing of the ureter over a considerable period of time, the constriction giving way to pressure of urine when a sufficient amount accumulates above the infected constriction.

FINAL PATHOLOGIC PICTURE

The length of this article prohibits our going into a detailed description of the final pathologic pictures in autonephrectomy. When we consider the various possibilities of tuberculous renal involvement with the mixed infections superimposed, including the upper and lower ureter and several types of bladder involvement, all exerting their influence on the final picture, and also the very vital point as to how much natural and acquired immunity the patient has for the particular types of infection, the resulting pathologic kidney may be any one of almost infinite varieties. All that can be done here is to discuss, briefly, the four general classes mentioned at the beginning of this article, and outline some factors among the pathologic forces that greatly influence the healing and destructive processes in the terminal picture of autonephrectomy.

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[59] Ekehorn: Die Ausbreitungsweise der Nierentuberkulose, in der tuberkulose Niere, Fol Urol 2:412. 1908

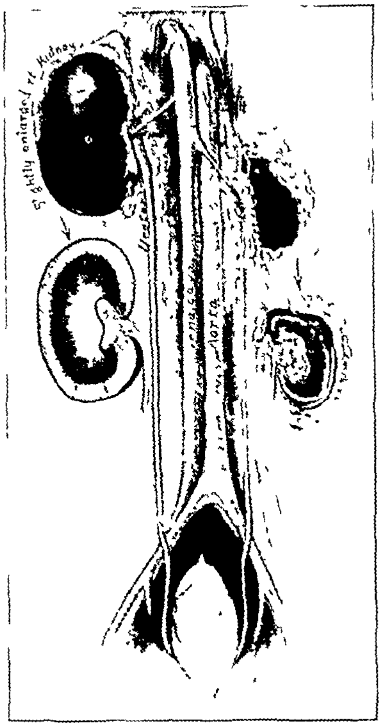

Fig. 16—*Drawing of left kidney atrophic sclerosis following injection of the parenchyma with tubercle bacilli and partial ligation of the artery; some sclerosis with marked calcification of perirenal fat It is a totally destroyed and walled off kidney.*

Closed Cavernous Type.—The closed cavernous type, which is the most common, has its beginning usually with tubercles forming at the base of one pyramid in the sluggish stream of the collecting tubules. From here, the process extends to the papilla and walls of the calix, and the tuberculous process usually chokes the connecting channel to the pelvis. Thus, we may have the whole kidney destroyed, or the destructive process existing only in a portion of the parenchyma and walled off, while the remaining parenchyma may perhaps show only slight tuberculous involvement, with scattered scar tissue.

Tuberculous Pyonephrosis.—According to König,[8] Penel,[61] Kuster,[2] Israel,[16] Frank[39] and others, if a pyonephrosis develops, it is indicative of mixed infection, and then we have the complex picture of a tuberculous involvement more or less advanced, with perhaps the colon bacillus superimposed by direct extension to the ureter, pelvis, calices, etc., or by the hematogenous route, spreading downward from the convoluted tubules and working havoc in the same direction as the tubercle bacilli. Or if a pyogenic infection exists, there will be a purulent infection of the cortical and perirenal tissues added to the primary tuberculous infection.

Cause of Atrophied Kidney.—According to Hinman and others, when infection takes place in a kidney, a tendency to anuria exists, and this slowing of the urinary excretion is in direct proportion to the virulence and extent of the infection. We may offer two reasons for this condition: (1) The toxins of such an infection dampen the sensory impulses to the excretory cels, and (2) the bifurcation of the interlobar arteries into the interlobular and arteriae rectae at the base of the pyramids is in the vicinity of the collecting tubules in which the tuberculous processes often have the primary seat of infection. With the formation of coalescing tubercles, endothelial proliferation, ulceration, caseation and general hyperemic congestion in the vicinity of these primary bifurcating arteries, not only are the arterial walls partly compressed, but there is also a tendency to obliterative endarteritis, with the narrowing of the lumen and checking of the blood flow to that particular portion of the kidney. This in turn will naturally lessen the flow of urine in the whole lobule above. It also has been proved by Marshall and Crane and by our experiments, to be mentioned, that checking the blood flow to a kidney will produce general atrophy of the parenchyma of that organ. Thus, it is not surprising in the first two types of autonephrectomy, often to find atrophied kidneys with enclosed renal lesions, although, of course, depending on the amount of anuria, and the early arterial constriction of pus formation, there must be exceptions as to the kidney's size.

Tuberculous Atrophic Sclerosis.—The third type, in order of frequency, is atrophic sclerosis with primary *tuberculous infection. In this type, there is usually* destruction of the kidney with complete anuria probably taking place before the obliteration of the ureter, so there is no indication of a hydronephrosis having

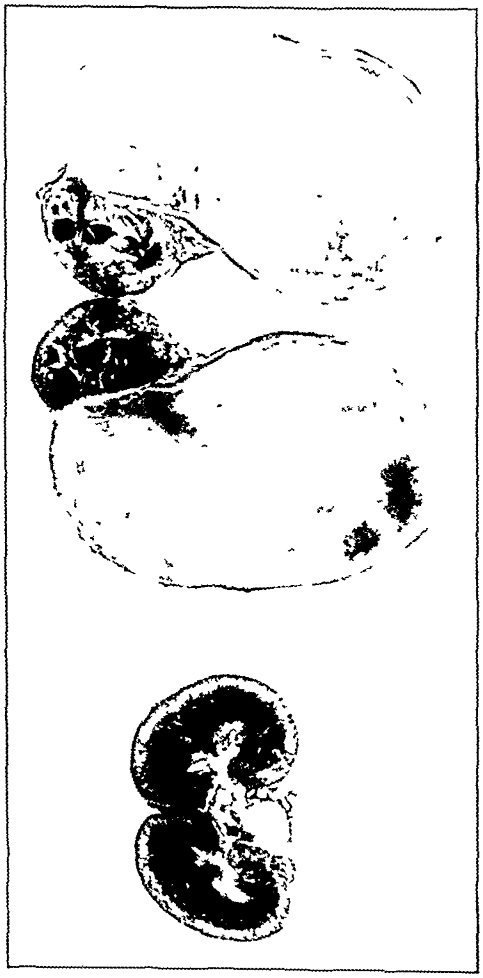

Fig 19—*A beautiful case of tuberculous hydro ureter in left rabbit kidney ureter The atrophic cavernous kidney is at the side of the hydro-ureter This condition was produced in the rabbit by injecting live tubercle bacilli in the wall at the junction of the pelvis with the ureter and ligation of the ureter farther down The right kidney is slightly hypertrophied and seems very small in comparison.*

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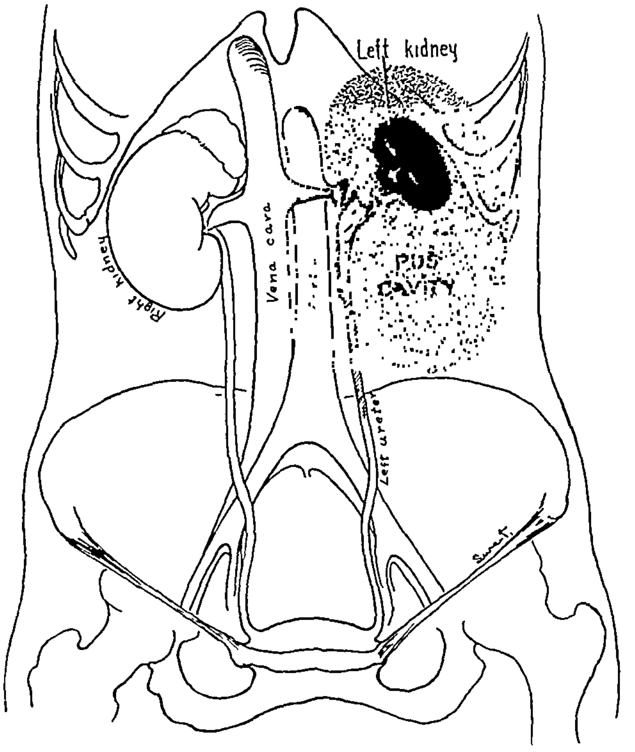
61. Penel: Renal tuberculose, Lyon méd. **113:** 576, 1909.

existed. There may be a secondary infection occurring late that may so involve the diseased kidney substance as to mask completely the primary tuberculous involvement. Indeed, cases are reported with the remains of a kidney from one-fourth to one-tenth the normal size which may be bathed in a perinephritic abscess. The distinctive microscopic feature of this type is the connective tissue formation and calcification, which processes resulted from absorption of the preexisting caseation. There are various other types in this atrophic group. In long standing cases, there may be complete absorption of liquid from the caseated cavernous and the tuberculous hydronephrotic types with complete collapse of the walls, leaving a collapsed sac with little or no caseated and calcified matter, and the sac may be bound down with caseated and fibrous adhesions, rendering it difficult or impossible to differentiate the kidney remnant.



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Tuberculosis is the active infection in the production of autonephrectomy, though a superimposed pyogenic or colon infection is often added in the final process of kidney destruction.

We have demonstrated that direct extension of infection from the bladder to the kidney through a healthy ureterovesical sphincter is possible. Also, we corroborated the work of many other investigators who have shown that infection may spread from the bladder region to the kidney directly by the lymph channels.

Out of the almost infinite number of pictures possible in autonephrectomy with mixed infection, we offer a classification of four general types, deduced from experimental work.

Our preliminary report on the experimentation with sixty rabbits has shown the various types of pathologic processes in the production of autonephrectomy.

The gross pathology of our specimens suggests most decidedly tuberculosis, but the microscopic picture is atypical of tuberculosis when compared with human kidney tissue; however, microscopically tuberculous renal destruction is strikingly similar to that of other animals.

380 Post Street.

TECHNIC FOR ORCHIDECTOMY

WHEN BOTH EPIDIDYMIS AND TESTIS ARE INVOLVED BY TUBERCULOSIS *

CHARLES S VIVIAN, M D.
PHOENIX, ARIZ.

Pessimism is frequently the keynote in prognosis when tuberculosis attacks the male genitalia. Part of this pessimism arises from the fact that individuals who have genital tuberculosis usually have the same malady elsewhere, notably in the lungs. Another cause for apprehension arises from the fact that the extent of the disease in the genitalia either precludes its complete removal by surgical means or entails long palliative treatment, always in the face of a possible generalization from the infected foci.

Early recognition of pulmonary tuberculosis leads to a more favorable prognosis. Similarly early recognition of genital tuberculosis is attended by more optimism for recovery, if the condition is adequately dealt with.

Treatment in pulmonary tuberculosis is essentially the same in all stages. It is summarized in one word, "rest."

Treatment of genital tuberculosis depends on the point at which the vicious circle is intercepted, plus rest.

It is beyond the scope of this paper to discuss the relative merits of the various surgical procedures that are advocated in attacking this problem. My intention, rather, is to present a method that has proved satisfactory for the limited number of cases in which it is indicated. The operation is not offered as a substitute for the firmly entrenched and justifiably popular operation of epididymovasectomy.

The indications for the two operations are different. In epididymovasectomy, the surgical problem presented is one in which the epididymis and vas deferens are involved by tuberculosis and the testis, if it is involved, carries so little infection that, if it is allowed to remain, it does not endanger the patient's health. The operation I am about to discuss is offered as the procedure of choice, when it seems advisable to remove the testis, together with any other areas involved by tuberculosis; that is to say, when the testis is involved to such an extent that, if allowed to remain, it becomes a menace to the life of the patient.

The most favorable case for its employment is one in which the patient is making a clinical arrestment of his pulmonary tuberculosis, but is being poisoned by absorption from a rapid development of the disease in the testis and epididymis

Barney found that forty-four of 100 testes removed because they were associated with tuberculous epididymides showed microscopic evidence of tuberculosis. All of these were cases of unilateral involvement. Is it not safe, then, to assume that microscopic involvement of the testis may take place early in genital tuberculosis?

It is not my purpose here to suggest that the testis be removed, when the involvement is only microscopic, for indeed the microscope is necessary for the diagnosis, and the gland should be conserved in the hope that by less radical surgery the burden of the patient may be lessened to the extent that he can overcome the involvement in the testis. But when this involvement in the testis has become macroscopic and the condition is still unilateral, orchidectomy is indicated for two reasons: first, because removal of the epididymis and vas deferens will not prevent dissemination of tuberculosis from a diseased testis by way of the blood or lymphatic streams; second, because removal of an actively tuberculous testis lessens the total of the load that the patient must carry.

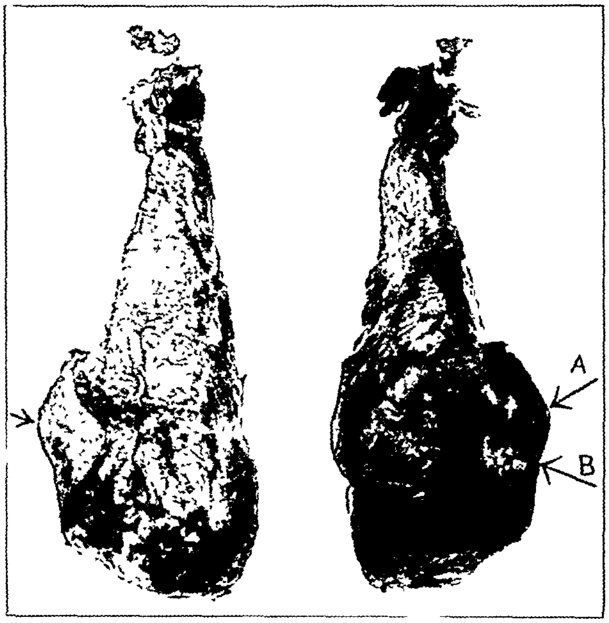

Fig 1.—The gross specimen, as removed intact, demonstrates that there has been no spilling of tuberculous material. The fact that the abscess, *A*, has been removed intact in the sinus bearing area of the skin, *B*, may be noted.

The extent of involvement at the time the patient presents himself determines the procedure of choice. Careful consideration of the patient's general condition by one whose entire effort is directed toward the care of the tuberculous is essential.

Advocates of epididymovasectomy may believe that all tissue requiring it can be removed by this operation

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* Read before the Section on Urology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

(epididymovasectomy), plus curettage or resection of the infected areas in the testis. In some of these cases, however, curettage or resection, if they are thorough, which they must be to be effectual, would involve ultimate destruction of the testis, either from leakage or from subsequent formation of fibrous tissue. Furthermore, curettage and resection are both open to the objection that, in their employment, tuberculous material may be forced into the general circulation at the time of operation.

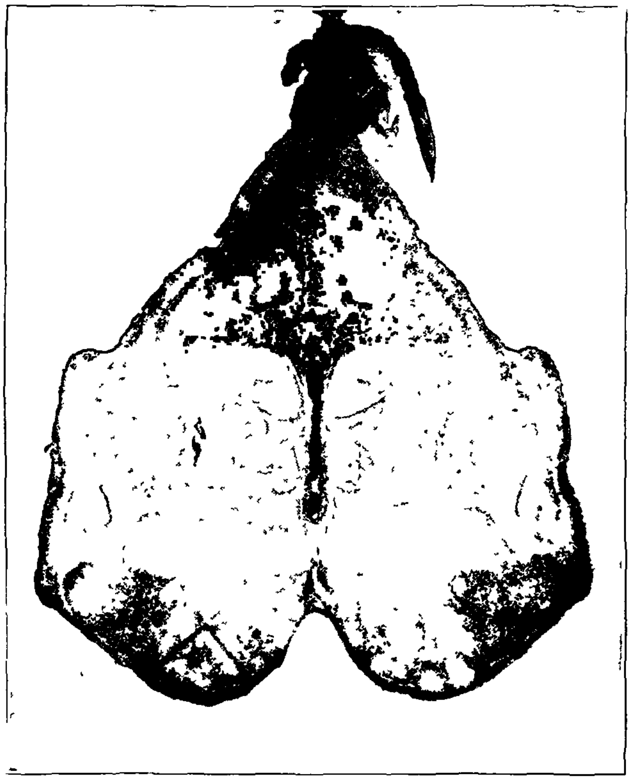

Fig. 2.—The testis shown in Figure 1 has been split to demonstrate the involvement. The abscess area has not been opened.

Recent investigation of the subject suggests that the earliest infection of the genitalia occurs in the seminal vesicle. The procedure that I am to consider may be combined with the operation of seminal vesiculectomy. Likewise involvement in other parts of the genital tract may be dealt with as indicated at the time of operation.

Once one has come to the conclusion that the testis is to be sacrificed, together with the other tuberculous foci, the following procedure is undertaken:

TECHNIC OF OPERATION

As most of these cases present one or more skin sinuses, these are sterilized with phenol (carbolic acid) and are covered by sterile cotton held in place by collodion.

The entire operative area, including the cotton collodion dressing and an area of skin giving access to the inguinal canal, is now painted with iodin, or more recently with mercurochrome-220 soluble. Under procaine anesthesia, the inguinal canal is opened and the cord drawn out of it. The vas deferens is isolated, pulled up from the abdomen as far as possible and doubly clamped and divided by the actual cautery. The vessels of the cord are doubly clamped, as soon as the vas deferens has been definitely separated from them. This procedure serves to shut off from the general circulation at the earliest possible moment the infectious material in the scrotum.

Treatment of the severed proximal end of the vas deferens, which is of importance, is now undertaken. It should not be ligated but should be secured in the wound, because of the subsequent drainage that, in all probability, will take place from it. A silkworm-gut suture, one end of which carries a skin needle, while the other end is armed with a round needle, is used. The round needle is passed through the wall of the vas deferens, with particular care so as not to enter the lumen. The skin needle is passed from within outward through the fascia and skin. The suture is tied, securing the vas deferens in the wound just under the skin. The clamp is allowed to remain on the distal end of the vas deferens. Division of the vessels of the spermatic cord is then accomplished by means of the actual cautery, and the proximal stump, having been securely ligated, is dropped back into the abdomen. The clamp is allowed to remain on the distal end of the vessels.

Isolation of the infected epididymis and testis from the general circulation is now complete, except for the anastomosing vessels of the collateral circulation. The divided end of the vas deferens, which has been left sutured in the wound, may open spontaneously after a variable length of time has elapsed following the operation, or it may have to be opened to allow drainage. This drainage, under heliotherapy, proper hygiene and carefully controlled tuberculin administration, ceases when the vesicle is no longer actively diseased. If the seminal vesicle of the affected side is not removed, this procedure affords it complete physiologic rest, which may be secured in no other way.

As described above, the diseased tissue is blocked off from the general circulation; then, under infiltration procain anesthesia, aided by that already introduced around the cord, an incision is carried well around the sinus bearing area and upward in a single line on the scrotum. The incision should extend through the skin and dartos muscle. These structures are reflected laterally until a line of cleavage is found between them and the scrotal contents, beyond the point at which they are adherent. The actual cautery may be used to free the infected adherent tissue, but this is unnecessary, if the line of incision is carried well away from the sinus bearing area, and if it particularly avoids any

Fig. 3.—The sinus bearing area has been covered by cotton collodion dressing, and the operative area painted in preparation for preliminary treatment of the vas deferens and vessels of the spermatic cord.

area in which there is a tendency for the scrotal contents to adhere to the skin. Dissection outside the tunica is then completed, so that the testis and epididymis, with the infected skin area, are free from all attachment and with the exception of the skin area are enclosed within a membranous covering (the tunica).

If dissection has been carefully carried out, the wound in the scrotum should be clean. Now the clamps that were left on the cut ends of the vas deferens and the vessels of the cord are pushed gently down through the inguinal canal into the scrotum, and removal is complete when these clamps are released.

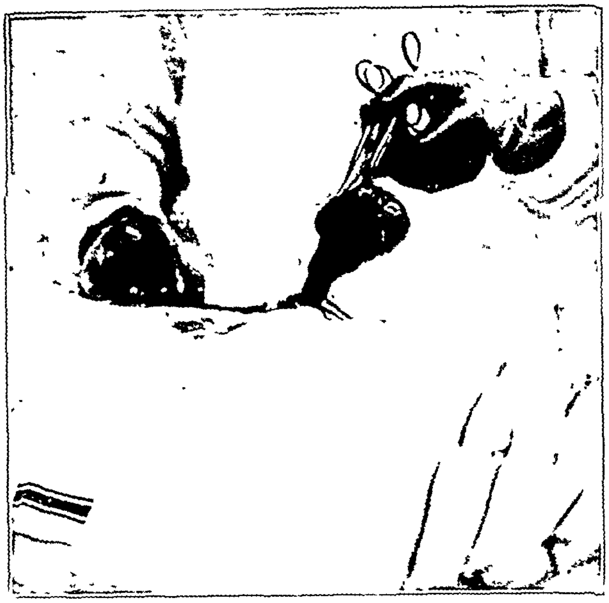

Fig. 4.—Dissection is complete. The structures in the scrotum are ready for removal, and there has been no spilling of tuberculous material

The wound over the inguinal canal is closed by skin clips. A small drain may be inserted in the scrotum to be removed in twenty-four hours, and this incision is closed in one or two lines, dependent on the shape of the excised skin.

Dressings are held in place over the scrotal incision by means of a snug suspensory.

The following brief outline of a case history serves to illustrate the type for which this operation was undertaken.

REPORT OF CASE

A man, aged 33, Jewish, and the father of one living healthy child, was referred to me from Phoenix Sanatorium, Oct. 20, 1923, because of swelling in the scrotum of the left side. He had spent nine months in the sanatorium, because of a moderate involvement of both lungs by tuberculosis. The pulmonary condition was arrested, and the patient was allowed to be up and about, until return of elevated temperature and symptoms in scrotum were noted. From two areas on the scrotum pus was exuding. The left epididymis and testis were swollen and very tender. The situation of the skin sinuses suggested that they might be coming from the testis, although the epididymis was involved to a greater extent. There was no evidence of involvement in the upper urinary tract, so that cystoscopy was not done. The prostate and vesicles were not notably enlarged. Both epididymis and testis were removed by the technic outlined above and showed numerous caseating areas, about equally divided between them. The sinuses were leading from the epididymis.

Ten days after operation, the cut end of the vas deferens opened and drained a small amount of pus for three months, when it healed. The wound in the scrotum healed by first intention. The patient did not return to the sanatorium, after leaving the hospital on the tenth day after the operation; the subsequent history was obtained from him after he sought treatment from an associate for acute tonsillitis, April 15, 1925. He has gained 10 pounds (4.5 kg.) since the operation, and is earning a living for himself and his family as the proprietor of a small grocery, in which he does all the heavier work.

CONCLUSION

A technic is presented by which a tuberculous testis may be removed without soiling the operative area and by which danger of dissemination of tuberculosis at the time of operation is minimized.

Goodrich Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PLAYER AND REDEWILL, AND DR. VIVIAN

Dr. A. L. Chute, Boston: There is a doubt in my mind whether we want to do the operation described by Dr. Vivian often. I think we do not. Most patients with tuberculosis of the epididymis and vas get well. For the case in which one wants to operate, Dr. Vivian has presented a very good plan. His isolating the cord and tying the vessels, as he does, before handling the testis or epididymis in his attempt to remove it, may be the means of preventing a miliary tuberculosis and death. Dr. Vivian's method seems to offer a rational way to prevent this. I like sewing the cord into the wound. We must assume, I believe, that the primary location of tuberculous disease in the seminal tract is the vesicle, and fixing the cord in the incision takes care of the suppuration that is almost sure to occur. It is a well-thought-out procedure.

Dr. C. M. Harpster, Toledo, Ohio: About twenty years ago I had a patient with tuberculosis of one kidney, which was verified by cystoscopic examination, guinea-pig inoculation and similar tests. I advised nephrectomy. He went to another large clinic, where my findings were verified, and nephrectomy advised, which he refused. I saw him shortly afterward, and he said he had been cured at some irregular institute. I was anxious to verify this by guinea-pig inoculation and he consented, several years ago, to a reexamination. I found that the bladder, which had been badly involved at the time of my original examination, apparently was symptomatically cured. I have seen a number of cases which I was pleased to call spontaneous exclusion of the kidney verified by roentgen-ray examination and ureteral catheterization which have followed calculus diseases. I do not think the speaker meant to infer that we have exclusion only from tuberculosis. In quite a large number of cases I have searched the bladder with the cystoscope, have observed the urine coming from the ureters, and have found in some cases that there was no urinary impulse on one side, and following the ureteral catheterization with a roentgen-ray examination have found the calculi and the exclusion of the kidney. Some of the ureters in which the kidney had been excluded were badly contracted, indurated and thickened.

Dr. Daniel N. Eisendrath, Chicago: There are two routes by which an ascending tuberculous infection reaches the kidney: (*a*) by reflux of bladder contents; (*b*) by the lymphatics of the ureteral wall. The latter has been clearly demonstrated by the work of Bauereisen, who followed the infection in the lower third of the ureter in animals as it advanced by way of the lymphatics of the submucous and periureteral layers of the ureteral wall. There is still some opposition to the lymphatic route. Cabot, Crabtree and others hold that infection by way of the lymphatics of the ureteral wall does not ascend to the kidney but passes into the lymph nodes, which lie at intervals along the course of the ureter, and from these nodes into the systemic circulation. My view, based on experimental work, agrees with that of Bauereisen; viz., both nontuberculous and tuberculous infections ascend by way of the lymphatics of the ureter without any material drainage into the regional lymph nodes. One must be careful not to make a diagnosis of bilateral renal tuberculosis unless one considers the possibility of regurgitation of infected vesical contents into the ureter and renal pelvis.

Dr. Clyde W. Collings, New York: I think Dr. Vivian's procedure will reduce to a minimum the chance of spreading miliary tuberculosis. During the last six years in Bellevue

Hospital we have had two patients develop miliary tuberculosis, following orchidectomy for tuberculosis We have been clamping off the cord as he does in the operation for teratoma of the testis, but were not smart enough to figure out that the technic could be used for tuberculosis We will incorporate Dr. Vivian's method and I think it will help solve our problem.

Dr W R Delzell, New York: I wish to ask Dr. Player about the clinical treatment of the patients with autonephrectomy is the kidney left in or taken out? We have had patients with a bag of pus remaining after an autonephrectomy, with symptoms persisting that necessitated nephrectomy.

Dr Lionel P Player, San Francisco The work of Dr Eisendrath, though not mentioned in that portion of the paper which I read before the Association, is definitely mentioned in another portion of my paper I had one case report of autonephrectomy that induced me to perform these series of experiments This case report was not mentioned because of lack of time. In this case, examination showed the kidney substance absolutely dissected away from the pedicle and pelvis No ligatures were necessary except for bleeders in the incised wound This kidney infection was a true autonephrectomy In answer to Dr Delzell I believe, the same as Caulk, Wolf and a host of other surgeons, that a "dead" kidney will sooner or later give trouble and it should be taken out, never left in as a possibility of the breaking out of new infection in the future

Dr Charles S Vivian, Phoenix, Ariz I do not wish to convey the idea that we operate in every case of tuberculous epididymitis or orchitis Many patients come to us who are far beyond surgical aid Occasionally, however, we find one in whom we believe that by removing the testis or the epididymis we can stop the process in the genitalia I think the answer to the problem is this If we can lessen the patient's burden by removing a focus of tuberculosis, then we are justified in operating The cases in which there is a sinus on both sides sometimes clear up very nicely after a long time, with the aid of the sun We have a different sun in Arizona—it is hotter and lasts longer I spoke of tuberculin We believe it should be administered in a sanatorium, with the patients under the care of a man who is devoting his entire time to tuberculosis

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ARTHRODESIS FOR TUBERCULOSIS OF THE SACRO-ILIAC JOINT

STUDY OF THE END-RESULTS [*]

M N SMITH-PETERSEN, M D.
AND
WILLIAM A ROGERS, M D
BOSTON

This study is based on thirteen cases in which operation was performed during the last seven years for tuberculosis of the sacro-iliac joint. The results obtained from this operative treatment justify a distinctly more optimistic attitude than has hitherto been entertained.

An end-result study should fulfil a twofold purpose: It should establish or disprove the value of diagnostic methods and it should establish or disprove the value of treatment

DIAGNOSIS

The diagnosis depends on a very careful history, as well as a careful examination

A detailed discussion of signs and symptoms diagnostic of sacro-iliac conditions was read before the American Orthopedic Association in 1924. An outline of it must suffice here (Table 1).

The almost constant finding of radiation pain over the posterior aspect of the thigh and leg is of importance, because of its diagnostic value in any sacro-iliac joint condition, whether traumatic or inflammatory. Since we find this distribution of pain present in 77 per cent. of cases of tuberculosis of the sacro-iliac joint (Table 2), we feel justified in drawing the conclusion that this so-called "sciatica" is typical of any condition involving the sacro-iliac joint.

We can draw no definite conclusions from Table 3. The list may or may not be present; sometimes it is toward the side complained of, sometimes away from the side complained of.

Table 1—*Outline of Symptoms*

1 History:		
	a Onset	Traumatic Nontraumatic
	b Pain:	Local Radiation
2 Examination		
	a Inspection	List Muscle spasm
	b Palpation:	Areas of tenderness
	c. Motions.	Standing Sitting Lying
	d Special tests.	Straight leg raising Compression of iliac crests Passive lumbar flexion

Table 2—*Analysis of History*

Site of Local Pain	Region of inferior sacro iliac ligaments and sacrosciatic notch	92% (12 of 13 cases)
Subjective Areas of Radiation Pain		
	a Posterior aspect of thigh	77% (10 of 13 cases)
	b Posterior aspect of leg	62% (8 of 13 cases)
	c Course of superior gluteal nerve	15% (2 of 13 cases)

Table 3—*Analysis of Physical Examination*

	Inspection	
List	45% (5 of 11 cases)	
	Toward Lesion	Away from Lesion
	1	4
	Subacute	Acute
	1	4
Spasm of erector spinae	50% (5 of 10 cases)	

Table 4.—*Analysis of Physical Findings, Points of Tenderness on Palpation*

Inferior sacro iliac ligaments and sacro sciatic notch ..	100 0%	(13 of 13 cases)
Distribution of superior gluteal nerve	15 0%	(2 of 13 cases)
Sciatic nerve trunk	7 7%	(1 of 13 cases)
Lumbosacral region	0	
Entire gluteal region	15 0%	(2 of 13 cases) Psoas abscess
Lower abdominal quadrant	15 0%	(2 of 13 cases) Psoas abscess

In Table 4 it is interesting and important to note that the physical findings agree so closely with the subjective symptoms In Table 1, there was seat of pain, region of the inferior sacro-iliac ligaments and sacrosciatic notch in 92 per cent. of the cases (twelve out of thirteen). On physical examination we find the inferior sacro-iliac ligaments and sacrosciatic notch sensitive to palpation in 100 per cent of cases (thirteen of thirteen cases). Pain of the superior gluteal nerve was present in two cases of the thirteen, or 15 per cent.

It is most important to emphasize again and again the fact that in none of these cases was sensitiveness at the lumbosacral junction found. A negative finding of this sort, as constant as in these cases, we feel is as important as a positive finding. The entire gluteal region and the lower abdominal quadrant were sensitive to palpation in two of thirteen cases; both of these patients had psoas and gluteal abscesses.

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[*] Read before the Section on Orthopedic Surgery at the Seventy Sixth Annual Session of the American Medical Association, Atlantic City, N J, May, 1925

TABLE 5.—*Symptom Analysis; Motions*

Increased range of forward bending sitting over that of standing	60% (3 of 5 cases)
Average increase	20°

TABLE 6.—*Special Tests*

Passive Lumbar Flexion:	
Over 145 degrees	50% (4 of 8 cases)
Less than 145 degrees	50% (4 of 8 cases)
Straight Leg Raising.	
Average limitation of affected side when present	25°
Average limitation of unaffected side when present	24°
No limitation on affected side, but accompanied by pain	50% (5 of 10 cases)
No limitation on opposite side	70% (7 of 10 cases)
Average difference, affected and opposite sides	1°
No limitation or pain	33% (3 of 9 cases)

TABLE 7.—*Symptom Analysis*

Compression of iliac crests, positive	38% (3 of 8 cases)
Rectal examination, positive	50% (2 of 4 cases)

TABLE 8—*Roentgen-Ray Findings, Preoperative*

Destructive process involving joint surfaces and adjacent bone	13 of 13 cases	100%
Increased density present	7 of 13 cases	54%
Periarticular thickening	3 of 13 cases	23%
Disalinement of pubes	2 of 13 cases	15%
Fusion, postoperative	9 of 9 cases	100%

No aggravation of pain on forward bending, standing or sitting was present in two of eleven cases, 18 per cent.

There are two points to be noted in Table 5. First, in the majority of cases, we get increased range of motion in the sitting position over the standing position This finding is explained by the elimination of ham string leverage on the joint, in the sitting position. Second, two cases showed no aggravation of pain on forward bending, standing or sitting. These cases, we feel, are cases of partial fibrous ankylosis; even though there is active disease, the joint is stable and, consequently, pain is not aggravated by putting the joint under strain or leverage.

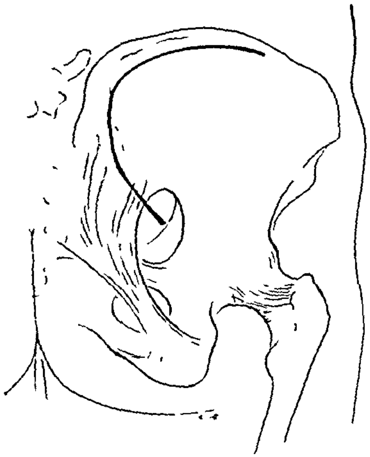


Fig 1.—Incision along posterior two thirds of iliac crest, curving around the posterior superior spine, then running parallel with the fibers of the gluteus maximus for a distance of from 2 to 3 inches

In discussing Table 6, we want to bring out the fact that 50 per cent. of the cases show passive lumbar flexion of more than 145 degrees. If the pelvis is moved as a whole and the ham strings are relaxed, there is no leverage transmitted to the sacro-iliac joints; consequently there is no pain. The 50 per cent. that did show limitation of lumbar flexion were cases in the acute stage, and the patients were markedly sensitive over the sacro-iliac joint, so that they were unable to stand the pressure of this region against the table.

Straight leg raising was limited by an average of 25 degrees, considering normal straight leg raising as approximately 70 degrees with the horizontal plane.

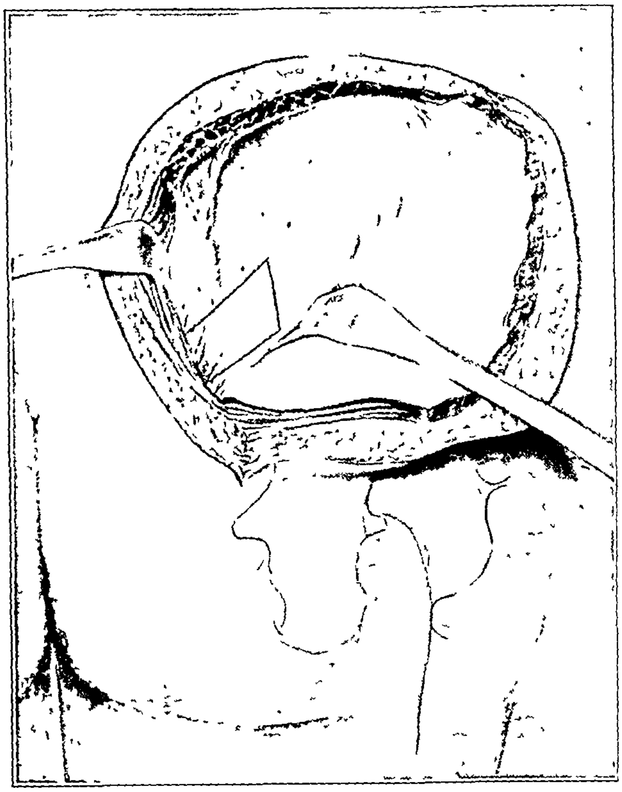


Fig 2—Flap outlined by incision as described under Figure 1 is reflected subperiosteally, exposing the lateral surface of the ilium If the sacro iliac joint is projected on the lateral surface of the ilium, it will be found that the inferior border corresponds to the sacrosciatic notch, and the anterior border to the median gluteal line.

Whenever straight leg raising is positive—that is, markedly limited—in inflammatory conditions, such as tuberculosis, it is apt to aggravate the pain when performed on either side, the affected and the unaffected, the difference between the two sides averaging no more than 1 degree.

In only 38 per cent. of the cases was pain elicited on compression of the iliac crests. This finding speaks for itself, and is a test considered by many orthopedists as pathognomonic of sacro-iliac conditions, and without which few orthopedists venture to suspect the sacro-iliac joint. Such a test is negative in more than half the cases with a proved destructive process.

Rectal examination is more worth while than it would seem from Table 7. It was recorded in only four cases, but was actually performed in practically all. The records are incomplete, but they are those on which this paper is based. In active tuberculosis, rectal examination is positive in the majority of cases.

In the early stages we find increased density along the joint line and in the soft tissues at the inferior margin of the joint. In the later stages there is, in addition, erosion of the joint line and bone atrophy of the ilium and sacrum. Disalinement of the pubes may occur in the more advanced stages of destruction.

Sixty-nine per cent. of the patients have returned to and worked at their previous occupations for an average of 7.6 months. Three patients have worked for more than six years, without local recurrence and without any secondary foci.

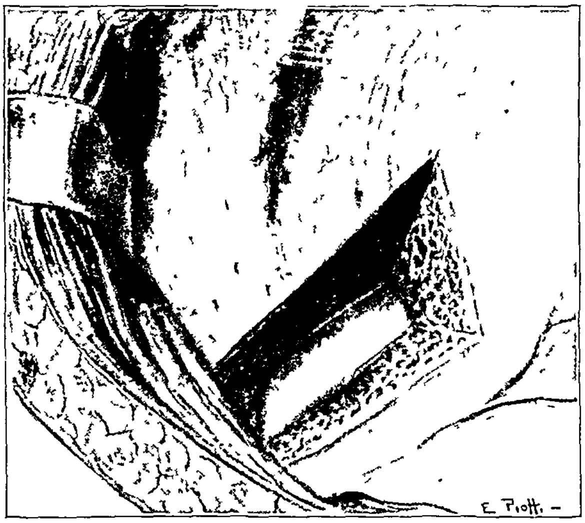


Fig 3.—With a motor driven saw, a window is removed from the ilium, this window extends posteriorly into the inferior sacro-iliac ligament

Ninety-two per cent. have had no pain since the time of operation. This means that the operation fixed the joint, eliminated motion and, therefore, relieved the pain.

By complete recovery we mean freedom from subjective *symptoms, negative physical examination* and return to previous occupation.

By partial recovery we mean relief from pain, but persistence of discharging sinuses. Two of the three patients under the latter classification have returned to their original occupations; the third did return but had to give up because of a secondary focus in the lumbar spine.

Table 9.—*Duration of Disability*

Return to Previous Occupation	Duration of Symptoms Preoperative	Average Time of Return to		Average Time at Full Activity	Length of Time Free from Pain
		Light Activity	Full Activity		
8 of 13 cases 69%	Average 17 mos from 4 to 36 mos	7.5 mos from 3 to 15 mos	12.6 mos from 4 to 32 mos	7.6 mos from 3 mos to 6½ years	Since operation 12 of 13 cases 92%

Table 10.—*End-Result*

Complete recovery	6 of 13 cases	46%
Partial recovery	3 of 13 cases	23%
Deaths	4 of 13 cases	31%

There have been four deaths. The first of these occurred in a patient who had an extensive abscess which, following operation, became secondarily infected; the patient left the hospital against advice and died three months later. The second patient returned to her previous occupation, following the sacro-iliac arthrodesis. A year later she developed Pott's disease and was treated by spinal fusion, but she died six months later from tuberculous meningitis. The third patient returned to her previous occupation entirely relieved; a year and a half after her operation she died from tuberculous peritonitis. The fourth patient was operated on in the presence of a discharging sinus leading down to an area of osteomyelitis in the posterior crest of the ilium; in spite of a persistent discharging sinus, he returned to his previous occupation, but died two and a half years after operation, from tuberculous peritonitis.

Death has not occurred in a single instance as a direct result of the operation.

CONCLUSIONS

1. This end-result study has definitely established the value of certain diagnostic methods.
2. Operation—arthrodesis of the sacro-iliac joint—is indicated by the results obtained.
3. The prognosis in sacro-iliac tuberculosis, when treated by arthrodesis, is not, as stated by Jones and Lovett, "the most fatal of all joint affections."

31 Bay State Road.

ABSTRACT OF DISCUSSION

Dr. W. C. Campbell, Memphis, Tenn.: Dr. Smith-Petersen has given us a very comprehensive study of the signs and symptoms of affections of the sacro-iliac and lumbosacral region. I regard his method of operation as the best that has ever been originated for the purpose of fusing the sacro-iliac joint, though I have had no experience with other measures. The operation can be done very rapidly; it requires only a few minutes; there is practically no shock, and it is safe. As to the indications: In the incipient or early stage, fusion is indicated. If there have been extensive destructive changes, abscess as noted by external swelling and induration or secondary infection with or without a discharging sinus, it is doubtful whether the operation is indicated at all, as there is danger of instituting a more extensive infection. It is well known that tuberculosis with secondary infection is never cured and rarely arrested. In one case in which I did not suspect an abscess, on reaching the joint I found a large tuberculous abscess. Secondary infection developed, with persistent sinus formation and finally death from tuberculous meningitis. In one other case, I discovered an abscess and advised against operation. It followed the same course after operation elsewhere. Tuberculous meningitis seems to be rather common in the sacro-iliac region. The question of fusion of joints, sacro-iliac and otherwise, is a most interesting one. These cases prove that tuber-

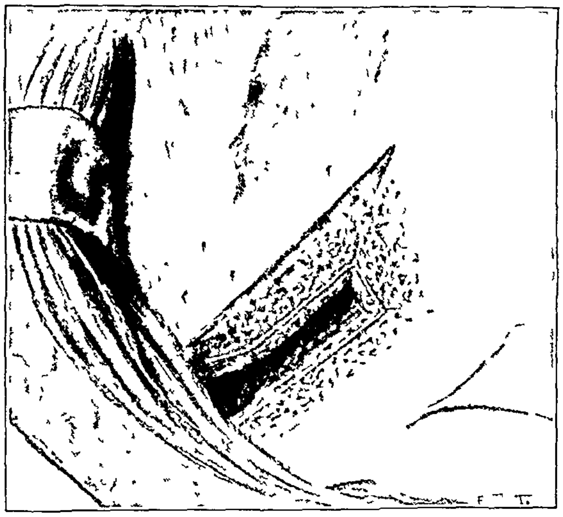


Fig 4.—Sacral joint surface is removed, exposing cancellous bone; joint cartilage is curetted with angulated curets.

culosis is a general disease. We are not giving enough attention to the tuberculous patient. We are spending a great deal of time talking about fusing everything, and too little time and attention is given to the general welfare of the patient afterward. Heliotherapy is a very potent factor in the treatment of tuberculosis. All these patients should be treated by heliotherapy after fusion, whether early or late If we did this, we should have better results. Fusion of a joint does not cure the disease. We may eradicate it locally, but we do not eradicate the disease from the organism as a whole.

Dr M. S. Henderson, Rochester, Minn.: Dr. Smith-Petersen's presentation is of value chiefly for two reasons First, because of the careful outline of his method of diagnosis. There is one diagnostic point he mentioned that I was relieved to hear; that the old-time test of squeezing together the iliac bones does not always produce pain in sacro iliac tuberculosis cases. The second point of great value is the iliac bones does not always produce pain in sacro-nothing to add to the technic. I think it is the best method we have, but I cannot refrain from referring to what Dr. Campbell mentioned Generally speaking, as orthopedic surgeons, we have paid too little attention to the general treatment of our patients with tuberculosis of the joints. I believe we must do much more of that, and treat the patients as we would treat patients with tuberculosis of the lungs. The operative risk is slight. The deaths all came late, after the patients had made a recovery from the operation. As Dr. Smith-Petersen pointed out, these patients died of meningitis, etc., after they had had an ankylosis of the sacro-iliac joint, showing that the operation at least accomplished what he set out to do.

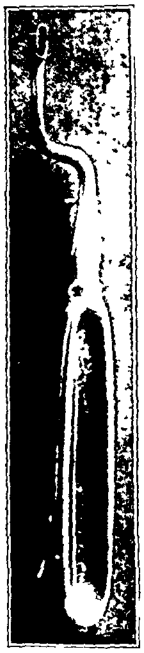


Fig. 5—Angulated curet.

Dr. F. J. Gaenslen, Milwaukee: Dr. Smith-Petersen has shown that mechanically and in a surgical way the joint can be arthrodesed satisfactorily. The roentgenograms show that conclusively. He has devised a method that is an advantage over most of the methods that I have seen or read about before, in that he gets at the joint by way of an interosseous route. He does not take away the posterior third of the ilium, as some men have done, disturbing the strong ligamentous supports on which the integrity of the joint depends I should like to outline briefly the method which I use. It consists in splitting the posterior portion of the ilium with a broad chisel into two leaves, an outer and an inner leaf. The outer leaf, with the periosteum and overlying soft parts and skin, is deflected outward. Then the remaining inner, standing leaf is attacked over the site of the sacro-iliac joint, and the joint, having once been found, by means of curet and chisel it is followed as far as may be necessary. That method does not attack the ligaments and the muscles that bind the sacrum to the ilium The integrity of the joint, so far as its ligamentous support is concerned, is not interfered with. Much depends on the area of involvement, and on the area or size of the joint. The sacro-iliac joint varies a great deal. Sometimes it is comparatively narrow; it is of less than the average height. Then, there may be a sacralized lumbar vertebra, with an unusually long joint. If a small area is involved in such a large joint, naturally one would not expect much pain on compression of the iliac crest; but, with comparatively large involvement in a relatively small point, it is much more likely to occur. The negative findings are of doubtful value, but a positive sign means a great deal.

Dr. F. H. Albee, New York: I believe that the diagnosis must depend wholly or very largely on the roentgen ray. I do not believe that any one should attempt any operation on the sacro-iliac joint unless the diagnosis is confirmed by the roentgen ray. As to method of procedure, I favor extra-articular arthrodesis in all tuberculous joints, wherever the technic is possible, in which there is activity of disease. The danger of metastatic infections in the meninges or elsewhere from going into an active tuberculous joint and doing a plastic operation is very real. Metastatic infection may not come immediately; it may be delayed. The grafts hypertrophy in an extra-articular arthrodesis and hold. Of course, the graft is put to a great deal more mechanical stress in an extra-articular arthrodesis of the hip than of the sacro-iliac joint. In the sacro-iliac joint it is extremely favorable, and the technic is extremely simple. The mechanical features of the operation just explained are very clever and I am sure are very good. The only disadvantage I can see with it is the danger of stirring up metastatic infections.

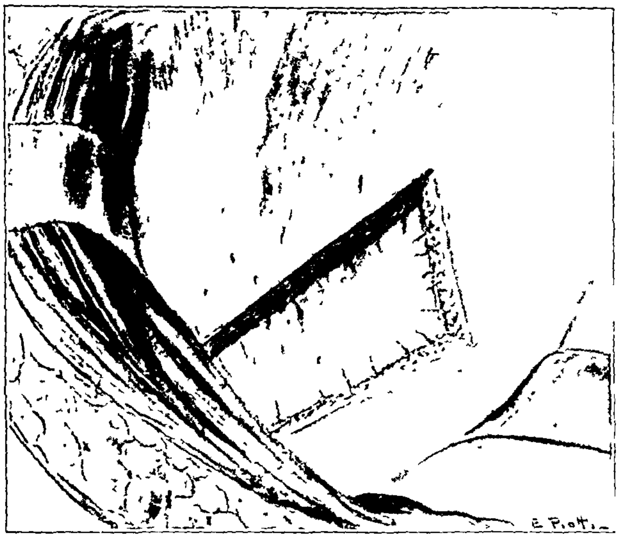


Fig 6—After the block of bone has been denuded of cartilage, this block is replaced and countersunk, so that its cancellous surface comes in contact with the cancellous bone of the sacrum

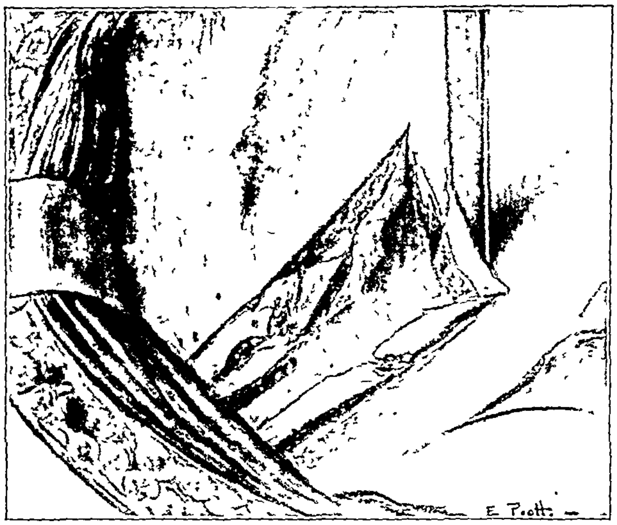


Fig. 7.—In order further to secure the countersunk block, and also to promote osteogenesis, the edges of the window are osteotomized.

Dr. F. R. Ober, Boston: The principal thing Dr. Smith-Petersen has shown is the excellent results obtained from a well planned operation and the importance of a careful examination of the spine in order definitely to localize the lesion. The roentgenograms in these cases of sacro-iliac tuberculous infection are not always very clear, but some-

[illegible] looks at one's old plates one will find cases [illegible] diagnosed as lumbar back strain which show [illegible] is very small but that can be seen; and [illegible] a series of plates at intervals of six or eight weeks one will notice the increase in the size of this lesion. About the operation, having seen many hemorrhages from

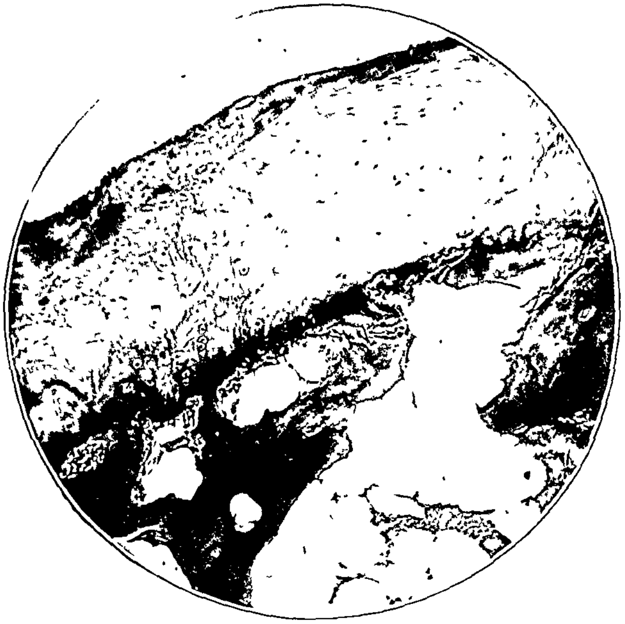


Fig. 8.—Section of normal sacro-iliac joint.

the superior gluteal artery in war service, I was a little hesitant before operating, so I got Dr. Smith-Petersen's original skeleton of the pelvis, from which he had taken out the bone [illegible]. All who have not seen the operation done or are not perfectly familiar with the anatomy of the pelvis and all the structures beneath the sacro-iliac joint should do the operation on a specimen before attempting it in the operating room. That will save a great deal of trouble.

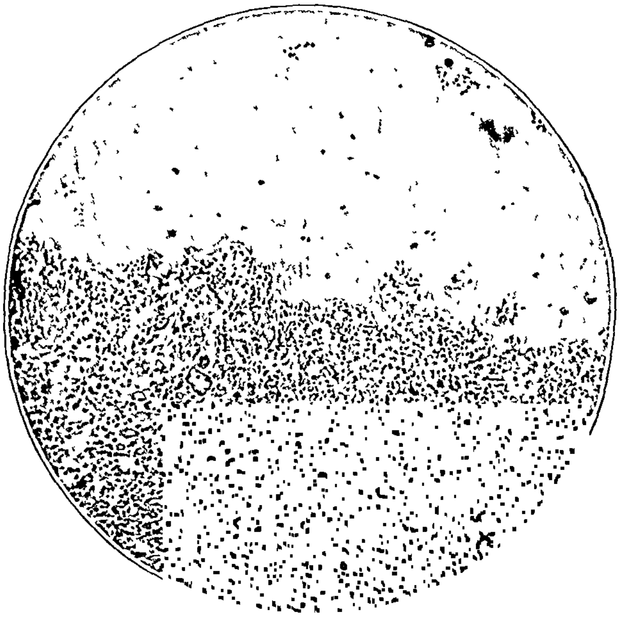


Fig. 9.—Case of tuberculosis of sacro-iliac joint, showing round-cell infiltration and giant cells.

Dr. M. N. Smith-Petersen, Boston: Dr. Campbell questioned the advisability of operating in cases in which an abscess was present. In the cases in which operation is done in the presence of abscess the prognosis has not been as good as in cases without abscess, but even so, the prognosis has been much better than if the joint had been left alone. Without operation there is invariably extensive destruction and the outcome is practically always fatal. By this operation we are trying to imitate nature. Dr. Campbell also spoke about meningitis occurring as a complication of this operation. In three fatal cases there was one of meningitis and two of peritonitis. Of course, we would like to have the positive roentgen-ray picture, but it is not at all necessary. I do think that we can definitely localize lesions in the sacro-iliac joint and differentiate them from the lumbosacral region; maybe not at the first sitting but by repeated examinations sufficient evidence is accumulated so as to make a differential diagnosis possible. In connection with extra-articular arthrodesis, there is always the danger that dormant tuberculosis may be stirred up and metastatic abscesses or secondary foci result. I have always felt that the quickest way to cure tuberculosis is to get bony ankylosis at the site of the lesion even in the face of the possibility of a secondary focus. The wedge driven in between the posterior crest of the ilium and the dorsum of the sacrum would tend to spread the joint and consequently would not render the local condition in the joint as favorable for bony ankylosis as an operation that aims to eradicate the joint. I have seen three cases in which the wedge operation was performed. The results were far from satisfactory. I agree with Dr. Henderson in regard to postoperative treatment and the need of emphasizing the importance of general hygiene and building up. A positive response to the test of "compression of the iliac crest" is distinctly in favor of the sacro-iliac lesion, but a negative response does not rule out a lesion involving a sacro-iliac joint. In regard to the technic of the operation: The superior gluteal artery is a real danger. An unskilled assistant can easily tear this artery or, rather, one of its major branches, by too heavy retraction. May I emphasize again the importance of radiation pain? "Sciatica" is a misused term. It is not sciatica; it is first and second sacral pain. The fourth and fifth lumbar are not involved in this radiation pain; pain is not referred to the anterior aspect of the leg and dorsum of the foot. Only two fifths of the sciatic nerve is involved. In trigeminal neuralgia, the divisions involved are always specified. One who wishes to use the term "sciatica" should say "sciatica with first and second sacral involvement." In three cases, urinary retention has been relieved after operation. Since the innervation of the bladder is derived from the second and third sacral nerves there is a possible relationship between the bladder innervation and the innervation of the sacro-iliac joint.

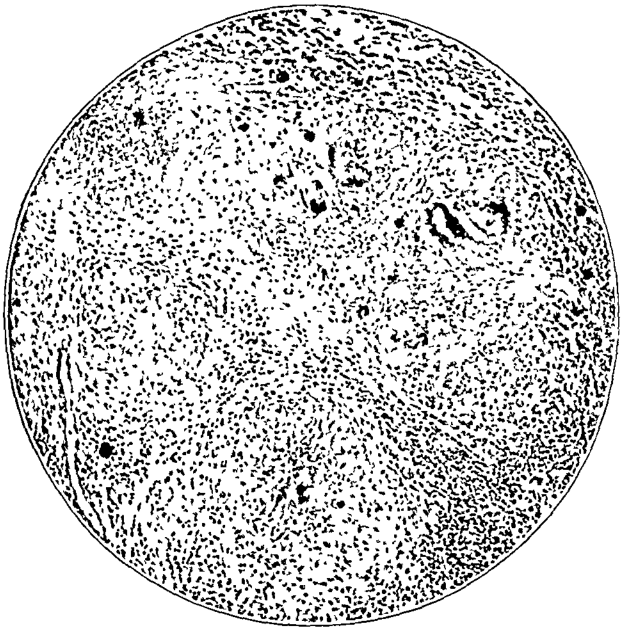


Fig. 10.—Another case of tuberculosis of sacro-iliac joint, showing round cell infiltration, giant cells and caseation.

Clinical Notes, Suggestions and New Instruments

PITUITARY DISEASE IN A BOY, AGED FOUR

Sigurd W. Johnsen, M.D., Passaic, N. J.

R. B. was admitted to the surgical ward after an automobile accident, suffering from minor abrasions of the face, and a slight scalp laceration. He appeared to be about 10 years of age, he was well developed but had an unusually well developed penis, like that of an adult, and an abundance of pubic hair On the arrival of his father, it was ascertained that the boy was 4 years of age

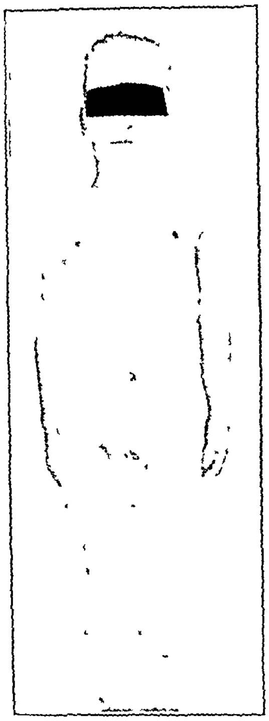


Fig 1 —General overdevelopment.

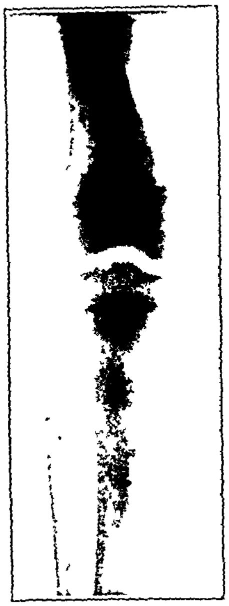


Fig 2 Epiphysis of lower end of femur almost united with diaphysis, almost complete ossification of epiphysis of upper end of tibia

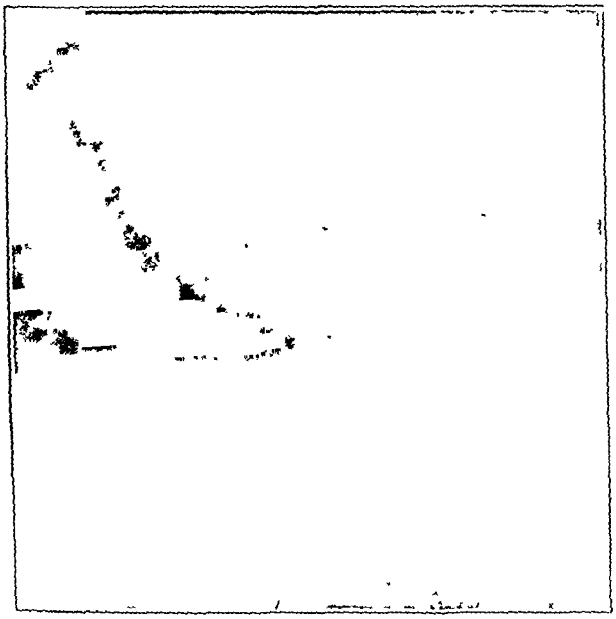


Fig. 3 —Enlarged sella turcica with the posterior clinoid process almost vertical.

He was born, April 15, 1921, of normal delivery, at home, and weighed 9½ pounds (4.3 kg.). At the age of 1 month, the mother noticed that the bowels were habitually constipated. She then gave him daily cathartics He was breast fed until 4 months old After that he was given 4 ounces (120 c.c.) of whole milk every three or four hours At the age of

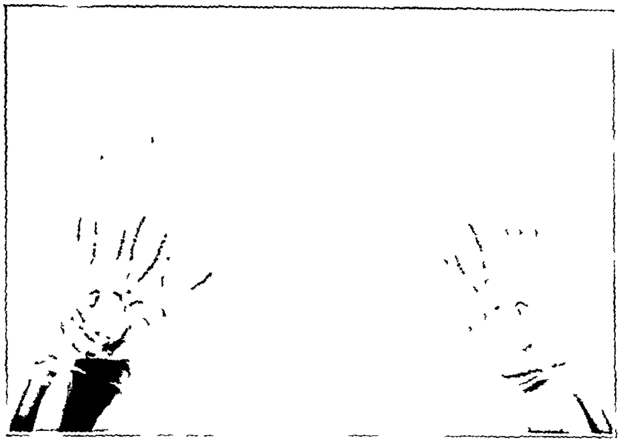


Fig 4 —Advanced ossification of carpal bones and epiphyses of metacarpals and phalanges

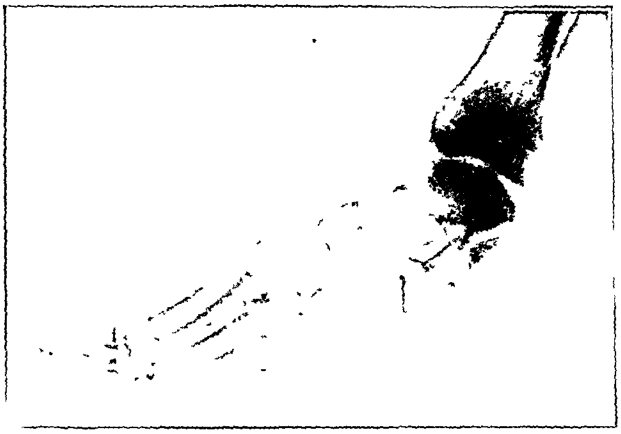


Fig 5 —Advanced ossification of tarsal bones and epiphyses of metatarsals.

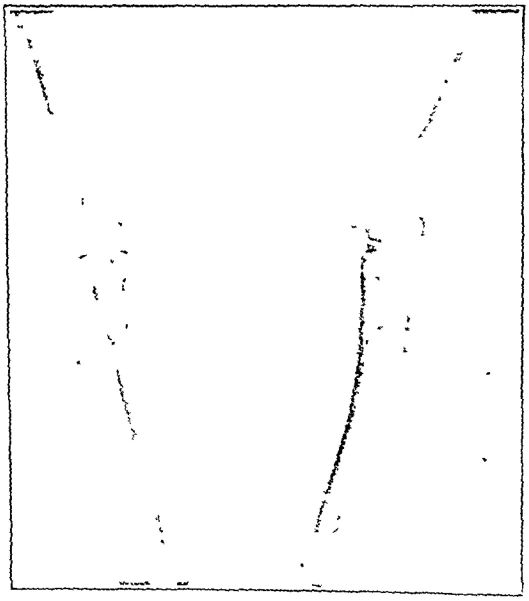


Fig 6 —Ossification of internal and external epicondyles of humerus marked, head of radius and epiphysis of upper end of ulna show advanced ossification

14 months he had an attack of convulsions, followed by two relatively mild attacks on the same day. Three weeks later he had another attack of convulsions lasting eleven hours. All the muscles of the body were involved. There has been no other attack up to present time. He had tonsillitis at the age of 2½ years, necessitating tonsillectomy, and measles in June, 1925. He began to talk at the age of 12 months, and walked at age of 14 months. The first tooth erupted at 6 months. The mother stated that he developed rapidly and was rather backward mentally, compared with his 3 year old normal brother.

The present weight was 65 pounds (29.5 kg); height, 125 cm. Head measurements were: occipitofrontal circumference, 51 cm; occipitomental, 60 cm. The neck measured 29 cm.; the chest, 67 cm; waist, 65 cm.; arm length, 36 cm; leg from the anterosuperior spine to the internal malleolus, 57 cm. The penis measured 12.5 cm.

Roentgen-ray examination of the skull showed an enlarged sella turcica with the posterior clinoid process almost vertical. The anteroposterior diameter was 1.3 cm.; the depth, 1.1 cm.

The roentgen-ray findings demonstrate a skeletal development corresponding with a normal osseous development of, at least, a 14 year old person. In the plate of the elbow, well developed osseous internal and external epicondyles are seen. The epiphysis of the head of the radius is ossified, and likewise the epiphysis of the upper end of the ulna. All the bones of the wrist are ossified, including the pisiform. This is true also of the bones of the ankle. The epiphysis of the lower end of the femur is almost united with the diaphysis. This is also true of the epiphysis of the lower end of the tibia.

Passaic General Hospital.

ENORMOUS CARDIAC DISTENTION

George L. Kessler, M.D., Brooklyn

This case should prove of interest, as I was unable to find any to compare with it in the literature:

P. M., a married woman, aged 31, a Jewess, was of good habits and had had no diseases of childhood, except at the age of 8, an attack of tonsillitis; this was followed by streptococcic arthritis, which cleared up and never returned, but left the patient with a stenosis of the mitral valve. The history up until the time I first saw her was indefinite.

She consulted me at 14 years of age for palpitation and indigestion. The physical examination at that time showed a heart of enormous hypertrophy and dilatation, with auricular fibrillation, mitral stenosis, aortic systolic murmur and tricuspid regurgitation. There was a slight icteric tint to the skin, and the liver was about three finger-breadths below the border of the ribs; urinalysis gave negative results; no edema was noticed; in fact, the symptoms complained of were slight compared to the condition found, and the patient was not depressed and did not seem to suffer much inconvenience.

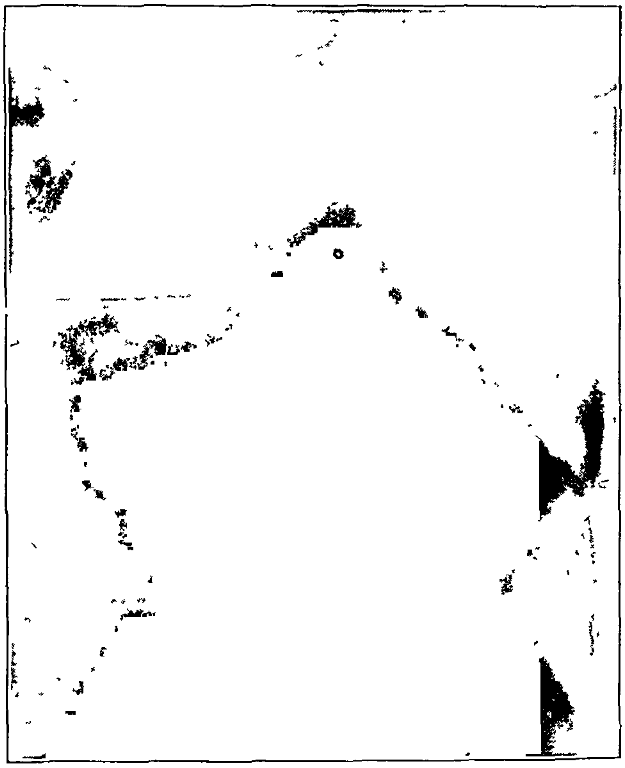
From that time on, I saw her at long intervals for what she called slight attacks of indigestion and occasional edema of the ankles; the heart showed a gradual increase in size.

She married at the age of 25, against advice, and about one year later had a miscarriage. From that time her heart attacks came at shorter intervals, but she always promptly responded to medication and was about again in a few days. One year after the miscarriage, she had an attack of lobar pneumonia from which she recovered rather slowly. By this time her heart had become so large that I suspected an aneurysm of the heart and sent her to the Bushwick Hospital for rest and observation. The apex of the heart was in the left midaxillary line; pulsations of the auricle could be distinctly felt, and the tricuspid murmur was heard in the right axilla. Cardiac dulness was continuous across the entire chest, measuring 12½ inches across, and 7½ inches in the perpendicular. The blood pressure was 108 systolic and 86 diastolic.

A roentgenogram was taken and showed a shadow filling up the entire space mentioned. Dr. Evan Evans saw the patient, in consultation, and marveled that she could live. Under the fluoroscope, the contractions of the heart showed plainly. There were three distinct contractions of the auricles to one of the ventricles. The liver was below the crest of the ilium, and pulsations could be felt in it. The surface was smooth and the edge was rounded. The kidneys and spleen were not enlarged.

The Wassermann reaction was negative, and urinalysis gave negative results. Hemanalysis showed 3,900,000 red cells; 7,900 white cells, with 22 per cent. lymphocytes and 78 per cent. polymorphonuclears. Hemoglobin was 77 per cent. The temperature was normal; the radial pulse was 68, and the heart beats were 100. No fluid was present in the pericardium, though it was thought to be, from the roentgenogram made by Dr. Heymann of the Bushwick Hospital, a reproduction of which accompanies this report.

The patient could not tolerate digitalis in anything except small doses. While in the hospital, intensive treatment with digitalis was tried and caused embolic hemiplegia and much cardiac distress. The hemiplegia disappeared in a few days after the administration of tincture of belladonna in 10 minim (0.6 c.c.) doses three times a day. Afterward, strophanthus was given, with happy results. The patient recovered and went to the Adirondack Mountains. She felt fine for about four months. Her attack returned, and occasionally edema developed in the bases of both lungs and the ankles, but disappeared again. About three months before her death, she had a severe attack, with general anasarca, and an examination of the urine showed numerous casts and a large percentage of albumin. All efforts to relieve her were in vain, and Dr. Glenworth Butler was called in consultation. He also stated that it was the most remarkable heart he had ever seen. The patient passed away the latter part of June, 1925, having wasted very much during the last month. All of her final symptoms seemed to point to uremia, as her heart seemed still to act fairly well. Dr. Evans informed me that he had heard of only two cases, one in Germany and one in Ireland, that could compare in size with this heart. This patient lived eighteen years, to my personal knowledge, with a heart ordinarily considered incompatible with life.



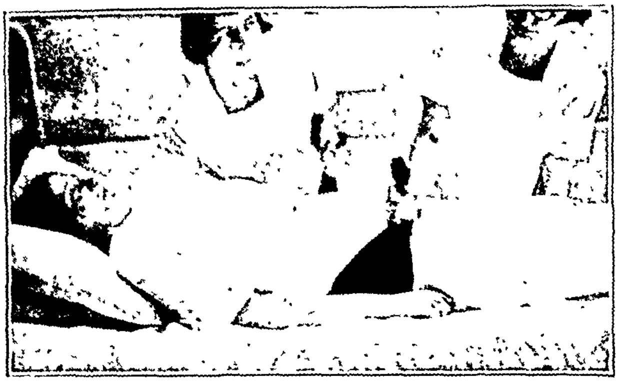
Condition about three years before patient died: Right auricle touches chest wall in right axilla and apex touches wall in left axilla; cardiac muscle at apex so thin that it is barely discernible, and so is outlined by ink marks; no fluid in chest.

1119 Bergen Street.

TOWEL SLING METHOD OF LIFTING PATIENT

Douglas P. Murphy, M.D., Rutherfordton, N. C.

An easy method of lifting, not commonly employed, is shown in the accompanying illustration. It is more comfortable to lifters and patient alike than the method in which both arms of the lifters are passed under the patient's body. By this method two can frequently do the work of three.



Towel sling method of lifting a patient; a black cloth has been used for color contrast.

A towel is passed under the lower part of the body. The near end is grasped in the left hand of the person at the patient's head. The far end is held in the assistant's right hand. The other arms are passed under the patient's body. *The lifting is most comfortable when the towel ends are grasped with the thumbs up, as shown in the illustration.*

CONGENITAL ATRESIA OF ESOPHAGUS ASSOCIATED WITH ATRESIA OF ANUS AND TRACHEA; ESOPHAGEAL FISTULA

Max Thorek, M.D., Chicago
Surgeon-in-Chief, the American Hospital of Chicago

Cases of congenital atresia of the esophagus, though not rare, are of interest.

REPORT OF CASE

G. S., a boy, born, Sept. 29, 1925, had no rectal opening. September 30, the infant was brought to the American Hospital for operation. No abnormalities were discovered in the eyes, ears, nose, throat, chest, lungs, heart, abdomen, genital organs or skin.

After two attempts, owing to the child's failure to ingest the barium, roentgen-ray examination showed a distinct pouch formation of the esophagus at the sternal notch, the material failing to pass farther. Reexamination, after three hours, showed a small part of the unejected barium meal in the same pouch formation, no barium having passed beyond it. A soft rubber catheter passed into the esophagus reached the lower margin of the pouch, then reversed, the tip returning into the oral cavity.

With the double malformation present the condition of the infant was deemed hopeless, and it was decided that it would be useless to submit it to the shock of a double operation. The child gradually became weaker and died, October 2.

Necropsy was made by Dr. Frederick Gruneck. The digestive, respiratory and genito-urinary organs were removed from the body *en bloc.*

The stomach was small, about 1½ inches (3.8 cm.) long and one-half inch (1.2 cm.) wide in the widest diameter. The walls were markedly thickened, especially at the pylorus. The small intestines were collapsed, and the large intestine was distended with meconium. The lowest part of the rectum and the anus was absent, the blind end of the rectum being attached to the posterior bladder wall. There was no cloaca, the opening of the bladder and the urethra being apparently normal, without any communication between the bladder and the rectum.

The esophagus was dissected and separated from the surrounding structures. The proximal end comprised about one third of the entire length of the tract and ended in a blind pouch which was about 1¼ inches (3.2 cm.) long and one-half inch (1.2 cm.) wide in the widest diameter. The lower third of the esophagus was followed upward with a fine catheter and disclosed a general narrowing of its proximal end, as well as an esophagotracheal communication. The two ends of the esophagus were united by a fibrous cord. The finest catheter was used, and both the proximal and distal ends from the pharynx and the stomach were probed, but no communication between the two ends could be found. A very fine catheter was passed from the lower part of the esophagus into the trachea. Injecting the proximal end of the esophageal sac with fluid revealed no communication with the lower segment.

The anatomic diagnosis was congenital atresia of the middle third of the esophagus, congenital atresia of the trachea, esophageal fistula and congenital atresia of the lower portion of the rectum and of the anus.

The occurrence of an associated atresia of the lower part of the rectum and of the anus makes this case interesting. Reynolds and Morrison[1] say that associated malformations are uncommon, but Plass[2] found that atresia of the anus was observed in twenty-four out of ninety-four cases in which the presence of associated anomalies was noted. A Meckel's diverticulum also is frequently noted in these cases.

CONGENITAL ABSENCE OF THE ESOPHAGUS

Robert E. Parrish, M.D., Washington, D. C.
Major, M. C., U. S. Army

W. L., a male infant, was born, Aug. 19, 1925, after normal labor lasting two hours and nine minutes, with left occipito-anterior presentation. The scalp was cyanotic, mucus coming from the mouth and nose. The crying was feeble. The child weighed 7 pounds (3.2 kg.). No external physical abnormalities were noted. Cyanosis was marked at times during the day of birth. A direct laryngoscopy was performed. The larynx was normal; the trachea was normal, and the small amount of mucus aspirated seemed to be located only in the pharynx and upper portion of the larynx. The heart was normal. A few moist râles were heard over the entire chest. Rectal feeding of glucose and whisky, given by mouth, resulted in regurgitation through the nose and mouth. Roentgen-ray examination, August 20, revealed a displacement of the heart to the right and evidence of air in the lungs. Rectal feedings were continued. August 22, direct laryngoscopy and aspiration of the larynx and trachea were done. The pharynx was normal. An attempt to pass instruments down the esophagus was not successful, all instruments coming to a full stop at about the normal position of the cricopharyngeus muscle. No lumen could be made out below this. A diagnosis was made of atresia of the esophagus, at the level of the cricoid cartilage. Gastrostomy was considered but not done. The baby grew weaker. The periods of cyanosis increased in frequency and duration. Oxygen was administered. The cyanotic attacks could be definitely assigned to salivary secretion passing into the larynx, as it could not pass into the stomach, the child not being able to cough and expectorate as frequently as was necessary to clear the passage. It died, August 23, three days after birth.

The findings at necropsy were congenital atresia of the esophagus, extending from the level of the cricoid cartilage to the cardia, where a small pouch projected up from the stomach. The pouch did not extend above the diaphragm. The atresia was complete. A fibrous cord about the size of a match extended from the hypopharynx to the cardia. No other congenital abnormalities were noted. Other necropsy findings were essentially negative, except for cardiac dilatation.

Walter Reed General Hospital.

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[1] Reynolds, R. P., and Morrison, W. W.: Congenital Malformations of the Esophagus, Am. J. Dis. Child. **21**: 339 (April) 1921.

[2] Plass: Johns Hopkins Hosp. Rep. **18**: 259, 1919.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
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CHICAGO

Introduction

These articles are devoted to the development of correct technic in the administration of medicines: "correct technic" meaning the best way of accomplishing a certain result. The slipshod manner in which most physicians order medicines would be shocking, were it not so common. If surgeons were as careless of their surgical technic as doctors in general are of their medicinal technic, surgery would be much less successful and far less popular.

Prescribing has almost become a lost art. The cause of this is to be found in the great development during the last fifty years of pharmacodynamics, so that nearly all the time previously allotted to the study of the drugs—and of how to use them—is now required for the teaching of the action of drugs. The result has, no doubt, been excellent as far as introducing greater precision in the choice of medicaments is concerned, but it has been unfortunate in that it leaves young medical men peculiarly helpless in the administration of medicines. It is of importance for success not only that the right remedy be given, but also that it be given in the right way.

PRESCRIBING IN ENGLISH

Another reason for insufficient instruction in the technic of prescribing lies in the time and effort used on an attempt at teaching prescription writing in Latin. So much attention is given to mere form that the substance is lost sight of. In the past, the study of *prescription writing has chiefly meant the acquisition* of a form of diction, archaic rather than classic; for what is called Latin prescription writing makes use of a vocabulary of which the ancient Romans were largely innocent. Prescribing in Latin, it is alleged, secures for our prescriptions an unchanging form, which can be interpreted by the initiated all over the world, and toward the laity a desirable degree of secrecy. In point of fact, our Latin nomenclature is far from being unchangeable; changes are made at each pharmacopeial revision. It is not international, for various nations, in a large number of instances,[1] have different terms for the same preparations and the same term for preparations that are different. That a Latin prescription can be filled anywhere in the world does not alter the fact that indiscriminate refilling of prescriptions is no less undesirable when the patient travels than when he is at home. In most instances, the Latin and English terms are so similar that the use of the former really does not contribute to secrecy, were such desirable; but, with the spread of intelligence in matters medical among the laity and the coincident waning of charlatanism among medical men, secrecy in prescribing has become superfluous. The modern physician is frank toward his patient; he has nothing to hide, and indeed he delights in tactfully taking the patient into his confidence. While, therefore, none of the arguments in favor of Latin prescription writing can be said to be irrefutable, there are a number of arguments in favor of prescribing in English. Among them are the following:

1. Few of us are sufficiently versed in Latin to be able to express directions to the pharmacist that are in any way unusual. Even if we were capable of writing such directions in Latin, not one druggist in a hundred would be able to understand them. Latin prescription writing absolutely stifles originality in prescribing. New drugs are continually being introduced, the coining of the Latin names for which is an embarrassment to the prescriber.

2. The fear of making mistakes in the Latin form is one of the contributing causes to that abomination in therapeutics, the prescribing of ready made proprietary mixtures.

3. A large number of prescribers are not able to write correct prescriptions in Latin. An investigation[2] on the quality of prescription writing in this country showed that less than a half of all prescriptions are written in correct Latin form—surely a poor showing for the time and energy invested in teaching Latin prescription writing. Is it not better to write prescriptions correctly in English than incorrectly in Latin?

4. By far the most important reason for writing prescriptions in English lies in the difficulty medical students have in learning the Latin form. To the student, prescription writing is a bugbear. When one thinks of the crowded medical curriculum and the comparatively small number of hours set aside for pharmacology and therapeutics, it seems a pity to waste any of it on the acquiring of an antiquated form of expression.

5. Experience of years has shown that English prescriptions are just as efficient as Latin prescriptions.

The real reason for prescribing in Latin is historical. It originated in the days when Latin was the chief medium for exchange of scientific thought. No longer are scientific lectures delivered in the Latin tongue; no longer are medical books written in Latin; no longer is it considered essential for an educated man to speak Latin, and no longer should it be necessary for us to make this pretense at a knowledge so few of us possess. For the reasons given, prescriptions in English have become accepted as the preferred form in The Journal, and will be employed in this series of articles.

THE METRIC SYSTEM

It seems time that the binominal system of weights and measures, with which we are at present burdened in this country, be abolished. Familiarity with one system is all that is desirable, required or possible for most of us. To force acquaintance with two systems on our medical students is confusing and wasteful of precious time, and it generally results in inefficiency in both. We should either take the self-sufficient attitude of our British confrères, who largely continue to use the old system of weights and measures, even though the rest of the entire civilized world has accepted the admittedly better metric system; or else we should abandon the old system for the new. To step backward to the old system is too late now, when the U. S. Pharmacopeia and the National Formulary and the publications of most of the scientific and governmental bodies have accepted the metric system, and when the recent graduates of most of our better medical schools are much more familiar with the metric than with the old system. It is therefore desirable for all to assist the old system into its well deserved oblivion by adopting the new. In the present series, the metric system will be used exclusively, except that hints will be introduced in appropriate places to show how easily those familiar with the old system may reform and employ the new, thereby helping to free us from another incubus of the past.

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* This is the first of a series of articles on "The Technic of Medication" When completed the articles will be assembled in book form.

[1] Fantus, Bernard: Prescriptions in English, J. A. M. A. 66: 1696 (May 27) 1916

[2] Fantus, Bernard: What Instruction Ought Medical Colleges to Give in Pharmacology and Therapeutics? Quart. Fed. State M. Bds, 1914, p. 293.

The fact that the tenth edition of the Pharmacopeia has just been published, becoming official, Jan. 1, 1926, makes it opportune to take cognizance in these articles of the changes that have taken place and to give, whenever it seems necessary, the reason for them. Opportunity will also be afforded to touch on some of the more important preparations of the National Formulary, the fifth edition (N. F. V) of which is just being published, and will become official, July 1, 1926. It has been said that the best way to kill the popularity of a proprietary preparation is to make it official. The kernel of truth in this no doubt facetious assertion might lie in the fact that it generally does not pay to advertise official preparations; therefore any popularity exclusively due to advertising soon dies down with the cessation of the advertising campaign. Unfortunately, however, even meritorious preparations are in danger of languishing in neglect merely because of lack of publicity, unless attention is called to them from time to time; this these articles will aim to do for the present. In this connection it might be well to emphasize the difference in scope of the U. S. Pharmacopeia and the National Formulary. An attempt has been made—more strenuously in the recent revisions than ever before—to withhold pharmacopeial recognition from any except useful drugs and preparations. A strong tendency has also been manifested to delete complex preparations from the Pharmacopeia. This does not mean, however, that all extrapharmacopeial preparations are useless or that complexity necessarily means unscientific composition. The National Formulary, on the other hand, aims to include those formulas for nonpharmacopeial preparations that are in extensive use in this country. It is altogether unreasonable to assume that many or even most of these extensively used preparations are useless. An attempt will be made to select from among the many formulas of the National Formulary some of those that seem most deserving of continued use. While, for efficient medication, acquaintance with the Pharmacopeia might suffice, he who aims at elegance as well would lose by not studying the National Formulary.

Local Versus General Treatment

Other things being equal, the physician who has the best command over the various methods of administration will be the most successful in the use of medicines; for it is not only what medicine is given but also how it is given that may determine the difference between success and failure. Obviously, the physician must be familiar with all the methods of introducing remedies into the body; for, though the most direct channel to reach the seat of the disease is the best, in the diversified conditions of medical practice any one channel for the administration of remedies may become unavailable—as, for example, the alimentary tract in case of vomiting or purging—and the resourceful physician must have other means of introducing the required remedy.

It must always be clear in the mind of the prescriber whether local action (i. e., action at the point of application) or systemic action (also spoken of as internal or general action, which occurs after absorption) is desired. For, local action is generally in inverse proportion to the degree of general action, and one has means of regulating the amount of absorption, and hence the degree of local and of general effect.

Frequently the most direct channel to the seat of disease is by internal administration, even though the affection is localized. For, once the remedy has passed beneath the surface, it finds itself in the blood and lymph stream, which carries it to all the organs of the body; so that the diseased part, unless it is limited to the surface, does not get any direct benefit from the topical application of a drug, except through modifications of the blood and nerve supply. Nevertheless, it is often well to order topical applications, in addition to internal treatment; for topical treatment may procure rest, support and compression, as when we apply a plaster; it may soothe and relax the part, as is done by warm compresses; it may, in the form of a cooling application, lessen the blood supply and the sensitiveness of a part, or it may, by the induction of hyperemia, favor reparative processes in the affected tissue as well as increase the extent to which the diseased cells are subjected to the action of a remedy brought to them by the circulation. When we increase the blood perfusion of a part to two, three or more times the normal, we obviously increase the access of a blood borne remedy in that proportion. Finally, it is good policy to prescribe topical treatment; for people commonly are so ignorant of the facts of the circulation that they cannot understand how a medicine taken by mouth can help, for example, a pain in the heel. If the physician neglects to prescribe local treatment, often some one else will and may do so unwisely. Thus, people ignorantly rub parts that require absolute rest, as in thrombosis of veins, and do harm, even to the extent of causing embolism.

MODE OF ACTION OF TOPICAL APPLICATIONS

The disrepute and neglect of topical treatment in modern medical circles is, to a certain extent, historic; it is due to false theories that were formerly resorted to for explaining the clinical benefit derived from these measures, used by humanity from time immemorial. In the days of humoral pathology, the benefit derived from topical applications was ascribed to a drawing of morbid juices away from the affected part and into and through the surface. This led to the heroic forms of counterirritation that were so popular during the dark ages of medicine. Large blisters were applied quite generally; and, when these did not suffice to "draw out" the disease, strong irritants were rubbed into the raw surface to make it "discharge hugely." Though, with the advent of cellular pathology and a better knowledge of the facts of the circulation, it became obvious that it was impossible to "draw out" disease by these means, many of the laity—a considerable proportion of which always is centuries behind the medical profession in point of view—still believe in the "drawing out" process.

No sooner had the ancient theory been thrown into the discard than a new theory was advanced to explain the indubitable benefit of counterirritation, i. e., the setting up of irritation in a healthy part for the benefit of morbid processes going on elsewhere. The Dastre-Morat law of antagonism, which postulates that hyperemia of the surface is accompanied by a diminution in the deep blood supply, was seized on. It was taught that the excess of blood in the diseased part was harmful and that this was diminished in the deep tissues when superficial hyperemia was induced.

The fallacy of this theory was exposed chiefly by the surgeon August Bier, who proved that localized hyperemia of the surface induces hyperemia of the depth even down to the bone, thus disproving the validity of the law of antagonism for local applications, though this law holds for extensive applications to the surface of the body. Bier also showed that hyperemia is not detrimental, but remedial. Blood brings to the part materials for repair, which are obviously needed in greater quantities by diseased than by normal tissues; and it brings antibacterial forces to bear on a focus of infection. Bier believes and shows not only that the pain of inflammation is not due to hyperemia, but that hyperemia actually has an analgesic action.

We must admit, however, that the production of hyperemia does not entirely explain the benefit obtained by counterirritation. Thus, mustard plasters applied to the epigastrium sometimes stop vomiting. To obtain such effects it is necessary that the application be made over certain particular areas, which in every case are found to have innervational relation with the affected part by being supplied from the same segment of the central nervous system. In consequence, deep irritation often produces an increased irritability of superficial nerve endings (Head's zones of hyperesthesia); sometimes it benumbs them, so that a very hot application may feel too hot elsewhere while just comfortable over the area connected by segmental innervation with the seat of disease. In the same manner, a severe irritation in the superficial expansion of a spinal cord segment may lessen the irritability of the deep part, or an analgesic application may relieve a deep pain.

Of late, the additional theory has been advanced that the tissue disintegration products given off in increased quantity from the irritated tissue exert a general tissue activating effect similar to the one assumed to be produced by nonspecific proteotherapy.

Finally, we must not lose sight of the fact that people have faith in local treatment, that it appeals to their imagination and that—just to this extent—it carries with it psychotherapeutic potency. From all these considerations may be coined the therapeutic maxim, Use appropriate topical treatment in all conditions in which it is justifiable.

CONTRAINDICATIONS TO TOPICAL TREATMENT

Topical treatment is likely to be an error in case of purely psychic disturbance. The very fact that treatment is addressed to the complaining part serves as a potent suggestion to the sufferer that there is disease in the part in which the suffering is felt. In such cases, the fixation of attention on the part may increase its sensitiveness and the distress. Here the therapeutic strategem of topical neglect is indicated; which means paying no attention whatever to the complaining part, while displaying solicitous care for the patient's general welfare. Thus we may succeed in impressing on the patient's mind the fact that there is no disease at the seat of complaint and lessen the focal nervous irritability that maintains it.

It is bad policy to apply any active topical treatment to areas in which in the natural course of events destruction or other marked lesions are liable to develop. Thus, when gangrene is imminent in a part, any application that happened to be used is likely to be blamed for the bad result. Indeed, parts very poorly supplied with blood are damaged by physical or chemical influences that may be beneficial in more normally perfused tissue. Hence we must avoid extremes of heat or cold or powerful chemical influences in all conditions in which gangrene is threatened.

Attention must also be called to the possibility of injurious combined effects of roentgen rays or radon (radium emanation) and of topical remedies. Mackee and Andrews [3] call attention to the fact that small doses of roentgen rays or of radon combined with topical irritants in strength may result in severe injury. Large, but safe, doses of roentgen rays or radon, combined with mild topical irritants, may give the same result. Intensive and reactive irradiation, with topical irritants in strength, is the combination most likely to be injurious. Hypersensitiveness is very marked immediately subsequent to a single intensive dose of roentgen rays or radon. The authors believe that the return to normal is very slow and that, even in the absence of visible reaction (erythema) or of permanent injury, the skin may not react normally to topical remedies for a month. If there has been a first degree radiodermatitis, manifested by erythema, but no permanent injury, the skin is likely to remain hypersensitive even for two or three months subsequent to the treatment. If there is permanent injury, as evidenced by telangiectasia, atrophy or scarring, the skin may remain hypersensitive for months and even years. Likewise, any agent capable of effecting an inflammatory reaction in the skin may make the latter more susceptible to irradiation. Chrysarobin, scarlet R medicinal, iodine, mercury, pyrogallic acid, cantharides, resorcinol, betanaphthol, tar, iodoform, sulphur, salicylic acid and other remedies of this type cause such hypersensitiveness of the skin. They produce the least trouble when used as powders; they are more potent in the form of ointments.

Applications to the Skin

In planning applications for the skin, it must be clear in our mind whether we desire epidermic action (action on the surface), endermic action (effect on the derma) or diadermic action (effect after absorption into the blood stream).

As one of the most important functions of the skin is protection of the body, this tissue offers considerable resistance to the penetration of medicaments. Being covered with a layer of dead keratinized cells and coated with a fatty substance, the sebum, the protection afforded by it is most efficient against watery solutions of nonvolatile substances, which are not at all absorbed by the unbroken skin. By means of the electric current, even nonvolatile substances in aqueous solution may be forced through the protecting layers of the skin. This process is known as phoresis, or cataphoresis. The quantity that can be thus introduced is, however, so small and is so rapidly carried away by the blood current after absorption that the method has not been used with much success. Watery liquids, therefore, should be applied to the skin only when action on the surface merely (epidermic action) is desired. When it is intended to kill micro-organisms or other parasites on the skin or inhibit their growth, watery solutions are useful, as they produce a maximum effect on the parasite with a minimum of action on the structures beneath. When vessels or nerve endings of the skin are to be affected (endermic action), or absorption into the system (diadermic action) is aimed at, penetration through the fatty and the horny layers is required. This can be attained by the use of agents that mix with fat, such as ointments; or by the application of volatile substances, such as are contained in many liniments. Penetration of these agents may be favored by thorough preliminary cleansing with soap and water, by friction, by heat and by occlusive dressings. As under these circumstances, a certain amount of absorption into the system takes place, we must guard against poisoning from potent applications by not making them too strong, too extensive or too prolonged.

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[3] Mackee, G. M., and Andrews, G. C.: Injurious Combined Effect of Roentgen Rays and Radium and Topical Remedies, J. A. M. A. 77: 1489 (Nov. 5) 1921.

Once the dead horny layer of the skin has been removed or its continuity interrupted, the absorptive function of the skin and its relation to medicaments approximate those of the mucous membranes. Hence, abraded, excoriated and ulcerated surfaces of the skin must be treated like mucous membranes and not like skin. Applications that would be harmless when used on the unbroken skin may become poisonous when made on raw surfaces.

DERMAL ADMINISTRATION FORMS

Owing to the ease with which the skin is subjected to physical influences, it often makes a great deal of difference whether the remedy is applied as ointment, paste, powder or shake mixture. The degree of penetration is likewise of decisive practical importance as, to be successful, the effect of the remedy must penetrate as far into the depth as the disease extends.

The reason for varying degrees of penetration lies partly in the fact that maceration of the skin favors absorption. Dry skin is most impermeable. Hence, dusting powders penetrate least. Softening of the layers of the epidermis increases the size of the interstices between the cells, and thus permits access and penetration. Hence, a moist dressing (compress) that causes maximal maceration of the skin, when permitted to remain in place for a sufficient length of time, favors penetration, especially when the application is made and kept hot.

Fatty substances favor penetration partly by preventing evaporation of sweat, thus leading to maceration and softening of the skin, and partly because they are mixable with the fatty secretion of the sebaceous glands through which a certain degree of absorption is possible. Friction, by forcing material into the sebaceous ducts, obviously favors penetration

As volatile and fat dissolving (lipophil) bodies are capable of penetrating the epidermis to a considerable extent, liniments and other applications containing such materials possess a greater degree of penetration than nonvolatile and water soluble (hydrophil) bodies

Applications to the skin will be discussed somewhat according to depth of action, as follows:

I. Dusting powders.
II Nonabsorbent films.
III. Lotions.
IV. Liniments
V. Medicated pigments and pencils
VI Salves, including pastes, cerates, and ointments

The classification given must not be considered as otherwise than of general guidance, because the individuality of the medicament may easily upset the sequence. The solubility of the active agent may favor or hinder penetration. For instance, phenol (carbolic acid) in aqueous medium attacks the fatty skin surface much more eagerly—because it is more soluble in fat than in water—than when phenol is applied in fatty medium. Irritating qualities of an agent will increase the degree of its absorption by the production of hyperemia.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION W A PUCKNER, SECRETARY

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1925, p 353)

The Cutter Laboratory, Berkeley, Calif.

Special Pertussis Vaccine—Marketed in packages of one 5 cc vial containing 5,000 million killed pertussis bacilli per cubic centimeter

QUININE SULPHATE (See New and Nonofficial Remedies, 1925, p 301)

The following dosage form has been accepted

Coco Quinine Each 100 cc contains quinine sulphate, 2 19 Gm. (10 grains per fluidounce), suspended in a syrup flavored with chocolate, yerba santa and vanillin, and containing sodium benzoate, 0 18 Gm per 100 cc. and alcohol, 4 per cent

Prepared by Eli Lilly & Co, Indianapolis U S trademark 174,144

CONCENTRATED CULTURE OF BACILLUS ACIDOPHILUS-P. D. L.—A milk culture of *Bacillus acidophilus* supplied in vials containing 2 cc. It contains not less than 300 million viable organisms (*B acidophilus*) per cubic centimeter at the time of sale.

Actions and Uses.—See Lactic Acid-Producing Organisms and Preparations (New and Nonofficial Remedies, 1925, p 191)

Dosage—The contents of one vial (8 cc) daily The culture is sent the patient weekly on the prescription of the physician Each package bears an expiration date after which the culture should not be used

Manufactured by the Physicians Diagnostic Laboratories, Berkeley, Calif No U S patent or trademark

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Fluoroscopy Aid in Diagnosis of Cancer of Stomach.—I have seen a number of cases in which the most careful abdominal palpation failed to reveal any tumor, but on repeating the examination under the roentgen-ray screen, when the stomach was visualized, it has been possible to recognize a thickening where an irregularity in outline or an abnormality in peristalsis was observed, the method of combined radiography and palpation, which should be carried out by the clinician and not by the radiologist because of the necessary exposure of the hands to the rays, may, therefore, be of great value when neither method alone has led to any conclusive result—Hurst, A F *Guy's Hosp Rep.* **75**:402 (Oct) 1925

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SATURDAY, JANUARY 2, 1926

DILATATION AND HYPERTROPHY OF THE HEART

The results of various mechanical changes produced by injury or disease in the circulatory apparatus are frequently overcome, so that the blood flow is maintained in a fairly normal manner. Among the agencies that may accomplish such readjustments, the hypertrophy of the heart muscle and the compensatory dilatation of the cardiac chambers are prominent. The compensatory hypertrophy is not always extended to include the entire heart; it may involve only the musculature of an individual heart compartment, if circumstances demand this. The details of the development of such adjustments are by no means well understood. Like a skeletal muscle, the cardiac musculature tends to increase in the size of its component fibers and in the contractile capacity of the organ, when it is subjected to more work than usual.

Additional light has been thrown on these readjustments by the investigations of Holman and Beck[1] of Western Reserve University, Cleveland. These investigators produced experimental abnormalities in the heart so as to direct the major stream of circulating blood through certain chambers and their corresponding vessels, the rest of the heart receiving a smaller volume of blood. Among the methods employed was the puncture of the septum, so that a patent orifice remained between the ventricles. In this way the blood was largely deflected, for example, from the systemic circulation and diverted in larger volume to the shorter pulmonary circuit. Under such circumstances there arises a gradual enlargement of the heart limited to that part of the circulatory system through which the deflected blood passes; namely, the left ventricle, the right ventricle, the pulmonary artery, and the left auricle. There is also a demonstrable hypertrophy of both ventricles, presumably the result of the increased effort necessary to propel forward an increased volume flow of blood, since it cannot be attributed to increased peripheral resistance. Immediately after the production of the defect, the right auricle and aorta become smaller than usual, conforming in size to the decreased flow of blood through them. As full compensation for the deflected flow occurs by an increase in total blood volume, they return to their normal size. Without such compensation they may remain smaller than normal.

It thus appears that heart and blood vessels place themselves in harmony with an increased volume flow of blood through them, the former by dilatation and hypertrophy, and the latter by dilatation. The Cleveland surgeons suggest that enlargement of the heart seen clinically in so-called idiopathic hypertrophy, essential hypertension, and also in certain cases of cardiorenal disease, may be due to an increase in total blood mass following some interference with the mechanism for its control. These experiments show that the size of the heart is commensurate with the volume flow of blood through it, whether the latter is altered by massive blood letting, by massive transfusion, or by a redistribution of the normal blood volume. The rate of the cardiac contractions alone cannot be considered responsible for the variations in size. According to Holman and Beck, the seat of the impairment in blood volume control may be in a chemical alteration of the blood; in a diseased function of the kidneys responsible in turn for decreased elimination or for a change in the composition of the circulating fluid; or in an abnormal stimulation of the organs producing the cellular elements of the blood. Both hypertrophy and dilatation are responsible for cardiac enlargement; and, as Holman and Beck point out, it is not unlikely that, when dilatation outstrips hypertrophy, decompensation ensues.

THE PROBLEM OF RHEUMATIC FEVER

Few diseases have been more difficult to define accurately than rheumatic fever; few have been the subject of more complicated theories. The exclusively physical and chemical hypotheses once advanced to explain the onset of acute rheumatism have given way to an assumption of a biologic etiology. Suggestions of sensory nerve irritation and consequent distant nervous complications due to the direct action of cold, or the proposition that uric acid in the blood will explain the symptoms, no longer concern us. Rheumatic fever is at present regarded as an infection with a great variety of manifestations. An expert student has pointed out that some of these are short in duration and apparently inflict little injury on the tissues of the patient; others pursue a chronic persistent course from the onset, with evidence of deep-seated injury to the affected organs, and still others exhibit alternate periods of activity and latency. These present sufficient variables to permit all sorts of speculation regarding the protean aspects of rheumatic fever.

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[1] Holman, E., and Beck, C. S.: The Physiological Responses of the Circulation to Experimental Alterations, I, The Effect of Intracardiac Fistulae; II, The Effect of Variations in Total Blood Volume, J. Exper. Med. 42: 681 (Nov.) 1925.

Bearing in mind that the etiologic agent of rheumatic fever has not been demonstrated conclusively and that it has not yet been possible to reproduce in experimental animals the characteristic clinical or histopathologic picture of the disease, Swift[1] of the Hospital of the Rockefeller Institute has attempted to consider the problem with the attitude that characterized students of tuberculosis before its cause was accurately ascertained. He points out that if phthisis or scrofula were the only tuberculous manifestation recognized by us, we should miss many important features of tuberculosis; so in the consideration of only arthritis and endocarditis, we obtain an incomplete picture of rheumatic fever. One should consider that in the latter, as in certain other infectious processes, there may be a development of an immunity or an allergy to the infectious agent. This is recognized as an effort on the part of the body to restrict the activities of the virus to smaller and smaller areas. In tuberculosis, Swift notes, this allergy is manifested in adults by a greater frequency of chronic tuberculosis of the lung. In rheumatic fever a similar tendency may be seen in the development of more frequent and severe joint lesions in adults than in children and possibly by a tendency to the development of chronic arthritis.

What is now known regarding the clinical and histopathologic features of rheumatic fever points to two general types of response on the part of the body to the invasion of the causative agent of the disease; namely, proliferative and exudative. These are not equally responsive to the same therapeutic procedures. The exudative symptoms may abate in consequence of the exhibition of certain drugs; yet symptoms of chorea may persist and the development of valvular changes may continue in patients receiving full therapeutic doses of salicylates or comparable substances. Hence there are various manifestations to be kept in mind in considering the problem of therapy. The often neglected maintenance of good nutrition is proving to be an effective aid in overcoming the ravages of the disease, as has been found true in other types of infection.

The elimination of symptoms does not always mean the eradication of the disease; there are many desirable aims of therapeusis that are asymptomatic. Our ignorance calls for conservative and extensive measures that shall comprise the various possibilities. Swift wisely points out that the successful warfare against tuberculosis has been based, not only on the destruction of the tubercle bacillus, but also on a recognition of the chronic nature of the infection and the application of suitable measures to enable the patient to combat that type. Accordingly, Swift regards as the most important phase of treatment of rheumatic fever the length of time necessary to keep patients quiet. It should be "as long as signs of infection persist." This presents a formidable program for the cases that require institutional care, for it involves a period of enforced proper rest longer than is usually recognized. Perhaps, Swift muses, the time may come when the tuberculosis problem has been completely solved and the sanatoriums will be converted into hospitals for the treatment of patients with rheumatic hearts; but before that time, provision should be made for the proper care of a large group of these persons. A few heart hospitals where proper study of these problems could be both intensively and extensively carried out, Swift concludes, would do much toward formulating a definite plan in the treatment of a condition that has experienced little permanent benefit from the methods now in vogue.

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[1] Swift, H. F.: Rheumatic Fever, Am. J. M. Sc. **170**: 631 (Nov.) 1925.

URINARY CHANGES DURING SEVERE EXERCISE

Theories of muscular contraction have undergone marked revision during the last few years.[1] Chemistry and energetics have contributed new points of view. The muscle is now most frequently pictured as a chemical machine rather than a heat engine. During the contraction of a muscle some of its carbohydrate, glycogen, is converted into lactic acid. Presently the lactic acid disappears. According to Meyerhof, some of it is destroyed by oxidation, while the rest is reconverted into muscle carbohydrate.

There are reasons for believing that phosphates play some part in the metabolism of sugars in the body. Among the explanations is the suggestion that hexose phosphoric acid is an intermediate product in the disintegration of sugar. It is believed that such "phosphated glucose" can be used in the organism, whereas other forms of carbohydrate are not equally available. The details of the various reactions and their true significance are far from being well established. It might be expected, however, that when the muscles perform vigorously, some of the intermediary products that arise are not otherwise taken care of with sufficient speed to prevent them from accumulating in the blood to a concentration in which the kidneys eliminate them in the effort to maintain the normal make-up of the circulating medium. Indeed, Barr[2] and his co-workers have strikingly demonstrated the relatively great variations in the reaction of the blood brought about by short periods of strenuous exercise.

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[1] Hill, A. V.: Muscular Activity and Carbohydrate Metabolism, Science **60**: 505 (Dec. 5) 1924. When a Muscle Contracts, editorial, J. A. M. A. **84**: 442 (Feb. 7) 1925; The Food and Fuel of Athletes, ibid. **84**: 2004 (June 27) 1925.

[2] Barr, D. P.; Himwick, H. E., and Green, R. P.: Studies in the Physiology of Muscular Exercise, I, Changes in Acid-Base Equilibrium Following Short Periods of Vigorous Muscular Exercise, J. Biol. Chem. **55**: 495, 1923. Barr, D. P., and Himwick, H. E.: II, Comparison of Arterial and Venous Blood Following Vigorous Exercise, ibid., p. 525; III, Development and Duration of Changes in Acid-Base Equilibrium, ibid., p. 539.

Despite the fact that the body can dispose of large quantities of lactic acid with great metabolic facility, Liljestrand and Wilson[3] of the University of Pennsylvania School of Medicine have been able to demonstrate the excretion of lactic acid in the urine after even brief periods of very strenuous exercise. Thus, the concentration of lactic acid in the normal urines ranged from 6 to 21 mg. per hundred cubic centimeters. After exercise, the maximum concentration varied from 700 to 1,840 mg. per hundred cubic centimeters. In some of these urines the concentration of lactate may have been higher than any other solid component of the urine. In the same laboratory[4] it was demonstrated that, following exercise, there is a decrease in urine volume, and an increase in hydrogen ion concentration and in acid and ammonia excretion. The elimination of phosphates rose while that of chlorides fell. This harmonizes with the evidence, obtained from experiments on isolated muscles, that the increased excretion of phosphate is due to the liberation of phosphoric acid in the active muscle and its diffusion into the blood stream and thence into the urine. As the Philadelphia biochemists point out, the relationship between the changes in the composition of the urine and the composition of the blood, which may be inferred from the correlations mentioned above, demonstrates how rapidly and efficiently the kidney responds to assist in the regulation of the neutrality and osmotic pressure in the body.

THE REGULATION OF BILE FLOW

Two significant facts, among others, have contributed to the uncertainty regarding the regulation of the flow of bile: (1) The gallbladder, which has often been assumed to bear some relation to this function, can be removed without untoward effects; and, (2) there are species of animals in which the biliary flow proceeds without reference to any reservoir, since this is normally lacking in them. These circumstances have placed a large burden of participation on the sphincter at the duodenal end of the common bile duct, so far as the discharge of the hepatic secretion into the intestine is concerned. Ever since the description of the sphincter of Oddi, there has been uncertainty as to its influence in the adjustment of biliary flow. This uncertainty is due in part to the indefiniteness of knowledge regarding the anatomy of the structures involved. Even the existence of a distinct anatomic sphincter has been debated. Mann[5] believes, however, that the evidence is sufficient to permit the conclusion that there is a bundle of muscle surrounding the end of the common bile duct, which could act as a sphincter. It is often difficult to find muscle fibers that encompass the duct exclusively, because they are closely intermingled with the circular fibers of the intestine, and in many instances there are few muscle fibers that might act exclusively as a sphincter. In certain instances, what would appear to be the sphincter is only an accentuation of the muscle coat in the intramural portion of the duct over that of the extramural portion, by the addition of fibers from the circular coat of the duodenum. Often the interlacing of the muscle fibers passing around the duct and the muscle fibers of the duodenum is so intimate that it is hard to imagine a separate action of the two groups of fibers. Usually, however, according to Mann, there are definite bundles of muscle that are distinct enough to be considered as a sphincter.

The fact that bile may pass into the intestine intermittently rather than continuously is well established. One explanation of this attributes the intermittence of discharge to the successive relaxation and renewed tonicity of the sphincter of Oddi. Burget[6] of the University of Oregon Medical School is inclined to stress the influence of the tonus of the intestine itself as a dominant influence in resisting continuous outflow from the common bile duct. The common bile duct passes through the intestine in an oblique manner. The mouth of the duct thus lies below the point at which it makes initial entrance into the wall of the intestine. As a physical arrangement, Burget points out, this would constitute an efficient sphincter-like mechanism, depending on the tonicity of the intestine. The duct within the intestinal wall is subject to collapse and consequently would offer a resistance to the passage of fluid in proportion to the state of tonicity of the intestinal musculature.

Burget further reminds us that no great tonicity of the duodenum is necessary to close the small lumen of the duct. The normal tonus is no doubt sufficient to prevent a continuous flow when the gallbladder is present. When the pressure is high enough to overcome this resistance, the bile flows into the intestine. The increased mechanical pressure on the filled gallbladder brought about by inspiration may easily be conceived to cause bile to spurt into the intestine, irrespective of considerable tonus in the duodenum. Coupled with this is the peristalsis of the duodenum in digestion, which invariably causes a flow when there is a moderate pressure in the duct. This is brought about partly by a milking action on the duct and probably partly by aspiration due to reduced pressure in the duodenum following the peristaltic wave. Hence, Burget believes, the function of the sphincter of Oddi has been overemphasized, and not enough attention has been given to the tonicity of the intestine in attempting to measure the resistance of this sphincter. The possible justification for this hypothesis is a matter of no small moment to the surgeon who is called on to interfere with the normal integrity of the biliary tract

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[3] Liljestrand, S. H., and Wilson, D. W.: The Excretion of Lactic Acid in the Urine After Muscular Exercise, J. Biol. Chem. **65**: 773 (Oct.) 1925.

[4] Wilson, D. W.; Long, W. L.; Thompson, H. C., and Thurlow, S.: Changes in the Composition of the Urine After Muscular Exercise, J. Biol. Chem. **65**: 755 (Oct.) 1925.

[5] Mann, F. C.: The Functions of the Gall Bladder, Physiol. Rev. **4**: 251 (April) 1924.

[6] Burget, G. E.: The Regulation of the Flow of Bile, Am. J. Physiol. **74**: 583 (Nov.) 1925.

Current Comment

METABOLISM OF NERVE FIBER

Metabolism in nerve fibers, whether at rest or during functional activity, has long interested physiologists Our ideas of cell function in general are linked with combustion, consumption of oxygen, giving off of carbon dioxide, and fatigue. Nerve tissue, however, has given but slight evidence of these properties. Bowditch, in 1885, found that induction shocks might be conducted over the sciatic nerve for several hours without complete fatigue;[1] and the generally accepted conclusion has been that medullated fibers[2] under normal conditions show no fatigue. Neither Rolleston nor Hill was able to demonstrate any of the heat production that would be expected if combustion were taking place Nevertheless, the consumption of oxygen by nerve tissue seemed a certainty when it was learned that nerves lose their irritability in an atmosphere deprived of oxygen, and Tashiro, in 1913, seemed to have established the other side of the oxidation process, when he reported production of carbon dioxide by a nerve during functional activity. Since the amounts of carbon dioxide discovered were so small as not to exclude the possibility of their having been dissolved in the tissues,[3] the world has awaited confirmation of Tashiro's evidence. Recently, however, Parker,[4] using the lateral-line nerve of the dogfish, which is a purely sensory, medullated nerve, has shown that one nerve can excrete as much as 0.017562 mg. of carbon dioxide, which is computed to equal 0 000000042 mg. from 1 cm. of nerve fiber in one minute. Possibly certain clinical symptoms may yet be found to be due to nerve fatigue, and neurasthenia become a well established clinical pathologic entity.

INCOME TAX RETURNS

Congress is rewriting the present income tax law A new law will probably be enacted at an early date and modify materially the returns required to be filed between January 1 and March 15. Physicians are advised, therefore, to postpone making returns until after the anticipated modifications are known After the enactment of the new law, ample time for filing returns will presumably be available. If it seems likely that this will not be the case, The Journal will give due notice.

Association News

THE DALLAS SESSION

Hotel Accommodations

Dr. E H Cary, chairman of the Local Committee of Arrangements for the Seventy-Seventh Annual Session of the American Medical Association, to be held in Dallas, Texas, April 19-23, has submitted the following list of the leading hotels of Dallas, together with the rates for rooms In writing for hotel reservations, it is desirable that each Fellow shall state in his letter to the hotel whether a single or double room is desired, whether a room with or without a bath is wanted, and, if possible, the time of expected arrival in Dallas and the length of time hotel accommodations will be wanted

Leading Hotels at Dallas

Name and Address	No of Rooms	Single		Double	
		Without Bath	With Bath	Without Bath	With Bath
Adolphus Hotel Commerce and Akard	825	$1.50 -3 50	$2 50 -6 00	$3 00 -6 00	$5 00 -8 00
Baker Hotel . . . Commerce and Akard	700	. .	$2 00 -5 00		$4 50 -7 00
Jefferson Hotel. .. Wood and Jefferson	400	$1 50 -2 50	$2 50 -4 00	$3 00 -4 00	$4 00 -8 00
Southland Hotel . Main and Murphy	250	$1 50 -2 00	$2 50 -3 00	$3 00 -4 00	$4 00 -5 00
Hilton Hotel .. Main and Harwood	[illegible]	$1 50 -1.75	$2 00 -3 00	$2.75 up	$3 00 -5 00
Scott Hotel ... Houston and Jackson	100		$2 00 -2.50	.	$3 00 -3 50
St. George Hotel 1012 Main	100	$1 00	$2 00	$2 00	$4 00
Waldorf Hotel . 1302 Commerce	100	$1 00 -1 50	$2 00 -2 50	$2 50	$4 00 . .
Park Hotel .... 1312 S Ervay	175	$1 00 -1 50	$2 00 -2 50	$2 00 up	$2 50 -3 50
Campbell House Elm and Harwood	108	$1.25 -1 50	$2.00 .	$2 50 ..	$3 50 -4 00
Milam Hotel. 2018 Main	60	$1 50 .	$1 75 -2 50	$2 50 .	$2 75 -3 00
Cliff Hotel 201 E Jefferson	117	$1 00 -1.50	$2 00	$1 50	$2 00
Texan Hotel . 212 S Houston	51	$1 50	$2 00	$2 00	$2 50
Apartment and Family Hotels					
Stoneleigh Court Apts 2927 Maple Avenue	405	....	$4 00	....	$6 00
Melrose Court Apts .. 3015 Oak Lawn Avenue	150	..	$3 50	...	$5 00
Oak Lawn Inn ... 3602 Cedar Springs	62	$1 00		$2 50	.....
Maple Terrace Apts .. 3000 Maple Avenue	400	.	$3 00		$5 00

Hotel Reservations for Members of the House of Delegates

In compliance with instructions given by the House of Delegates, tentative reservations have been made at the Baker Hotel, Dallas, so that each member of the House may be assured of a room at that hotel. The names of all delegates, as far as they are known at the present time, have been sent to the management of the hotel, and letters have gone out to all delegates requesting them to write direct to the Baker Hotel asking for the reservation of such accommodations as may be desired In writing, delegates should be careful to specify that the accommodations desired are to be provided from the allotment of rooms tentatively reserved for members of the House of Delegates. Reservations should be made at the earliest possible time. If for any reason a delegate does not wish to have accommodations at the Baker Hotel, he should notify the Secretary of the Association as soon as possible in order that reservations tentatively made and not required may be released for the accommodation of other members of the Association.

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[1] Howell, W. H: Text Book of Physiology, Ed 9, 1924, p 118

[2] Starling, E H: Principles of Human Physiology, Ed 3, p 285.

[3] Bayliss, W. M. Principles of General Physiology, Ed 4, 1924, p 378

[4] Parker, J. H: The Carbon Dioxide Excreted in One Minute by One Centimeter of Nerve Fiber, J Gen Physiol 9: 191 (Nov 20) 1925

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Physicians Cited.—Dr. Charles B. Pinkham, secretary, state board of medical examiners, writes that the following physicians have been cited to appear at the next regular meeting of the board to be held in Los Angeles, March 9, *1926*:

William S. Fowler, M.D., based on his plea of guilty to a charge of violating the state medical act.

William A. Strole, M.D., based on his plea of guilty to a charge of violating the Harrison Narcotic Act.

Ernest Harold King, M.D., based on violating subdivision 10 of section 14, advertisement and treatment of venereal disease.

Chinese Hospital Opened.—The first Chinese hospital in San Francisco, representing an expenditure of more than $250,000, was recently opened. The need for a Chinese hospital became apparent in 1918, when under the leadership of the Chinese Six Companies and others, fifteen different organizations set about to raise funds. The building is five stories high, of concrete construction, and in equipment is among the best in the West. The medical profession has cooperated in forming a staff, the four divisions of which are presided over by American educated Chinese physicians, who make up the executive committee of the staff. The wards will administer especially to the poor, but also to pay patients. There is a free clinic. The regulations for the organization of the board of directors and the staff are adapted to serve the special needs of this hospital.

DISTRICT OF COLUMBIA

Certified Oysters.—An amendment to the District health regulations which affects oysters will be put into effect by the commissioners. The health officer was advised by the state food and drug commissioner of Maryland that certain firms conducting shellfish establishments in Maryland are shipping into the District oysters under sanitary conditions not approved by the Maryland state health authorities. Dr. William C. Fowler, district health officer, pointed out in a memorandum to the commissioners that last year a conference was held by the Surgeon General of the Public Health Service with state representatives, at which an agreement was reached whereby all oyster-producing states would issue regulations for the safe conduct of the shellfish industry. Dr. Fowler said:

> From information reaching the health department, it appears that certificates are being issued by the proper state authorities to all concerned in conducting shellfish establishments in their particular state in a manner satisfactory to the authorities. In cases where proper sanitary safeguards are not employed, certificates are refused. As the health department of the District of Columbia has not means of its own of determining whether oysters are being handled in a safe manner at the plants where they are shipped, it must depend on the certificate of the proper state authorities for such information. It seems to me, therefore, that no oyster or other shellfish should be permitted to be offered for sale or sold in the District of Columbia unless evidence is at hand to show that these marine products are safe for human consumption.

The regulations as adopted by the commissioners, and which become effective after thirty days, reads: "No shellfish shall be offered for sale or sold in the District of Columbia that are not obtained from sources approved by the health officer of said District. Any person violating the provision of this regulation shall, on conviction thereof, be punished by a fine of not more than $40 for each and every offense."

GEORGIA

Hospital News.—Drs. George L. and George H. Alexander have established a hospital in Forsyth.——A complete roentgen-ray unit has been installed in the Savannah Hospital.——The Baptist Hospital, Atlanta, recently broke ground for a new $500,000 addition.

Society News.—Dr. Albert Keidel, associate professor of clinical medicine, Johns Hopkins University Medical School, Baltimore, addressed the Fulton County Medical Society, Dec. 9, 1925, under the auspices of the Piedmont Hospital Clinical Society on "The Present Status of the Treatment of Syphilis."

Dr. Wade Found Not Guilty.—A jury in the federal court at Augusta, Dec. 2, 1925, returned a verdict of not guilty in the case of Dr. Arthur C. Wade, who had been charged with violation of the Harrison Narcotic Law. The jury, it is reported, was out a short time (The Journal, Feb. 28, 1925, p. 681).

ILLINOIS

Society News.—Dr. Otto H. Schwarz, Washington University School of Medicine, St. Louis, addressed the Sangamon County Medical Society, Springfield, Dec. 3, 1925, on "Puerperal Infection: Its Bacteriology and Treatment," and Dr. Edward Lee Dorsett, St. Louis, on "Conservative Treatment of Eclampsia, with Especial Reference to the Use of Magnesium Sulphate to Control Convulsions."

Chiropractors Move On.—It is reported that H. F. Kovski, chiropractor of Athens, having been prosecuted and fined $100 for violating the medical practice act, has sold his property and is moving to another state.——E. J. Hollingsworth, chiropractor in the same county in which Kovski was located, has likewise disposed of his holdings and moved to a neighboring state; a court action was pending against Hollingsworth, and was soon due to come to trial. The county medical society supported the state's attorney in prosecuting these cases.

Protest Advertising for Physicians.—The Adams County Medical Society, Dec. 14, 1925, passed a resolution protesting against the action of the management of the Western Catholic Union Building of Quincy in sending out literature stating that there is a demand in that city for physicians, and endeavoring to induce physicians to come to Quincy and secure offices in the Western Catholic Union Building. The medical society states that there is an ample number of physicians in Quincy to care for the needs of the people, and that such information is apt to work a hardship on physicians who give up their practice to come to a community that already has a surplus of physicians.

Compulsory Health Education in Normal Schools.—Arrangements have been completed to introduce into the normal schools of Illinois compulsory courses in health education. The plan agreed on by the presidents of the five universities, the state department of health and the state department of registration and education, requires that each student have a certificate of health signed by the family physician, and undergo a physical examination within a year of registration and again within a year of graduation. The courses in health education for two year students will consist of five hours a week in the classroom, supplemented by field work such as sanitary investigations and by work in the gymnasium; four year students will take, in addition, one of a group of elective health subjects. The object is to give the future public school teachers a practical training in hygiene and sanitation that will enable them to teach health in the schools.

Chicago

Society of Medical History.—At a meeting at the City Club, Dec. 18, 1925, Dr. James B. Herrick, president of the Society of Medical History of Chicago, gave an address on "William Heberden"; Dr. Ludvig Hektoen, on "Early Postmortem Examination in America—Health Conditions in Early Norwegian Settlements," and Dr. Morris Fishbein, on "Eclecticism."

Additions to Cook County Hospital.—Work will soon start on additions to Cook County Hospital, which will give that institution a total capacity of about 3,500 beds. The new structures will be, according to the Chicago *Tribune:* 1. An eight-story children's hospital, facing on Wood Street, with a minimum capacity of 480 beds, the wards of which will contain not more than seven beds each, with each bed separated from the next one by a glass partition 7 feet high; each floor will have two solariums and four private rooms. There will be two roof gardens, two operating rooms and an amphitheater for clinics in the basement seating 125. 2. The new men's building, facing Lincoln Street, a seven-story structure with a minimum capacity of 300 beds. 3. The morgue, on Wood Street back of the administration building; it will be three stories high, in Italian renaissance, and have an amphitheater seating 160. The research laboratory and the Institute of Forensic Medicine and Pathology will be in this structure. 4. A new receiving building in the center of the hospital grounds; patients no longer will be received through the main entrance of the hospital, and tunnels from this building will lead to all parts of the hospital. The total cost of these additions will be about two and a half million dollars; they will make Cook County Hospital perhaps the largest and most complete in the world.

INDIANA

Personal.—The new city board of health of Marion appointed Dr. Frank A. Priest to be city health officer to succeed Dr. Victor V. Cameron.——Dr. Walter C. McFadden has been appointed secretary of the board of health of Shelbyville.——Drs. Garrette Van Sweringen, Daniel R. Benninghoff, Jr., and Raymond J. Berghoff have been appointed members of the board of health of Fort Wayne, effective under the new administration, take office January 4.

Society News.—Drs. Bransford Lewis, St. Louis, and Frank C. Mann, Rochester, Minn., recently addressed the Munsey Academy of Medicine on "The Succession Method of the Removal of Stones from the Kidney Pelvis" and the "Experimental Study of the Reduced Liver Function," respectively.——Dr. August O. Truelove, Fort Wayne, addressed the Adams County Medical Society, recently, at Decatur on "Roentgen-Ray Therapy."——Dr. Fred M. Douglass, Toledo, Ohio, addressed the fortieth special annual meeting of the St. Joseph County Medical Society, South Bend, recently, on "Some Phases of Gall Bladder Disease," and Dr. Joseph Brennemann, Chicago, on "The Diagnosis of Abdominal Conditions in Children."——Dr. Edgar C. Denny, Milton, addressed the Shelby County Medical Society recently on "The Good of Medical Organization," and Dr. Samuel E. Earp, Indianapolis, on "The Uses of the Common Drugs."

KENTUCKY

Personal.—Dr. Hiram S. Eggers, for five years medical inspector in Louisville, tendered his resignation, Nov. 30, 1925.——Drs. Walter F. McCrocklin, Louisville, and Vernon Robins have been reappointed as assistant city health officer and bacteriologist, respectively.——Dr. Frederick D. Cartwright has been elected city health officer of Bowling Green, to succeed Dr. Morton M. Moss.

A Million for the University of Louisville.—At the recent election in Louisville, the citizens voted about six to one to authorize the issue of $1,000,000 in bonds for the University of Louisville, and $5,000,000 for the public schools of that city. The university is a part of the municipal educational system; the bond issue will be used to erect the first of a group of buildings on the new campus, and to pay off a debt incurred when the campus was purchased. The school of medicine will remain close to the Municipal Hospital and will not be moved to the new campus. There are now forty freshmen in the premedical combination course in the College of Arts and Science; last fall, 225 applications for admission to the freshmen class of the medical school were received. The enrolment is limited to about seventy-five

LOUISIANA

Bootleg Physicians to Be Expelled.—The Rapides Parish Medical Society voted, Nov. 25, 1925, to make a part of its constitution and by-laws a resolution to the effect that any member found guilty of prescribing any form of opium illegally, or of selling, trading or giving away his national prohibition prescription book to any druggist or individual, shall be expelled from the society. The resolution also disapproved of writing prescriptions for liquor for any purpose except medical in the treatment or cure of disease.

State Board Meeting.—The Louisiana State Board of Health, at a special meeting, Dec. 14, 1925, adopted the standard milk ordinance of the U. S. Public Health Service, and approved a set of regulations which the board will insist all municipalities conform to, unless they establish more stringent regulations. At this meeting Dr. John G. Martin submitted a report for November for Lake Charles, showing that twenty-one dairies were producing milk with bacterial count ranging from 1,000 to 31,000 per cubic centimeter; the highest bacterial count of the Grade B dairies was 83,000. The state board at this meeting authorized the purchase of a motor truck and equipment to carry exhibits to rural communities away from the railroads.

MARYLAND

Gifts to Frederick Hospital.—Gifts totaling $150,000 have been made by three citizens of Frederick to provide additions to the city hospital. A wing for negro patients has been provided by Mr. and Mrs. Joseph D. Baker, and a wing for general extension of the hospital facilities by Mr. Charles M. Shank.

Superintendent Appointed.—The board of managers of the state tuberculosis sanatorium has ratified the appointment of Dr. John A. Smith as superintendent of the Mount Wilson branch of the institution, which will open early this year. Dr. Smith has been assistant physician at the tuberculosis sanatorium at Sabillasville under Dr. Victor F. Cullen. The new branch at Mount Wilson for the present will be equipped to care for only women's and children's ambulatory cases The rates for treatment in the branches of the state tuberculosis sanatorium have been increased from $3.50 a week for ward patients and $7 for private rooms to $5 and $10, respectively. A number of beds will be maintained free as heretofore.

Personal.—Dr. Francis Carter Wood, director, Institute of Cancer Research, Columbia University, gave a public lecture on "The Necessity of Education in the Control of Cancer" at the School of Hygiene and Public Health, Johns Hopkins University, Dec. 7, 1925.——Dr. Virgil H. Danforth, Kempton, W. Va., has been appointed assistant physician at the Springfield State Hospital, Sykesville.——Dr. William Siegal has resigned as superintendent of the negro branch of the Maryland Tuberculosis Sanatorium at Henryton to accept a position elsewhere, and Dr. John E. O'Neill, Baltimore, has been appointed as his successor. Dr. O'Neill served fourteen years as head of the municipal tuberculosis dispensaries and two years at the Henryton Hospital.——Dr. Frederick W. Sears of the New York State Department of Health gave one of the De Lamar lectures at the School of Hygiene and Public Health, Johns Hopkins University, Dec. 21, 1925, on "Some Problems in Rural Hygiene."——Dr. William H. Welch has been appointed a member of a special board of trustees for a fund which the National Academy of Sciences is endeavoring to raise for research in pure science; it is hoped that an annual income of at least $2,000,000 may be raised to establish national research fellowships and in other ways cooperate with institutions throughout the country.——Dr. William W. Ford, professor of bacteriology, Johns Hopkins School of Hygiene and Public Health, has been appointed to prepare the official report to the state department of health of the life of Raymond C. Salter, D.Sc., chief, bureau of bacteriology, who died recently.

MASSACHUSETTS

Dr. Nobel Sentenced Again.—Dr. Lemuel F. Nobel, Boston, was recently sentenced to serve two years in the house of correction on a charge of larceny, it is reported. Dr. Nobel is said to have served eighteen months in the house of correction a few years ago, following a raid on a sanatorium with which he was connected for the treatment of drug addicts.

Complimentary Dinner to Dr. Green.—About 250 pupils and former house officers of Dr. Charles M. Green, professor emeritus of obstetrics and gynecology at Harvard University Medical School, gave a complimentary dinner in his honor at the Harvard Club, Dec. 18, 1925, on the occasion of Dr. Green's seventy-fifth birthday. Dr. Frederick C. Shattuck, the toastmaster, presented Dr. Green with a book containing his writings, autographed by those present, and also a silver bowl. Among the speakers were Drs. Joseph B. De Lee and Emilius C. Dudley, Chicago; Dr. Barton C. Hirst, Philadelphia, and Dr. John O. Polak, New York.

MICHIGAN

Chiropractor Sentenced.—J. E. Fitzgerald, Sturgis, chiropractor, was found guilty in circuit court in Centerville, Nov. 30, 1925, of practicing medicine without a license, it is reported, and was sentenced to ten days in jail and to pay a fine of $100

Thirty-Three Typhoid Cases Traced to Carrier.—The Michigan State Health Department announced, Dec. 26, 1925, that the thirty-three cases of typhoid fever which followed a church dinner at Eaton Rapids, Nov. 18, 1925, had been traced to an 80 year old woman, who had contributed squash, which she worked through a colander with her hands. The aged woman had typhoid many years ago; laboratory tests showed that she is a carrier. Among those afflicted are former Lieut.-Gov. Luren Dickinson and Dr. Manes B. Bradley, former state auditor general. To date three of the cases have proved fatal.

MINNESOTA

Diphtheria Immunization in St. Paul.—There have been 8,559 school children immunized against diphtheria with toxin-antitoxin in St. Paul this school year, and there is a much better spirit of cooperation among parents than last year. According to the health officer, Dr. Benjamin F. Simon, no child is immunized without a written consent of the parents. Most of this work is being done by the school physicians and nurses free of charge.

MISSOURI

Hospital News.—An ordinance has been introduced in St. Louis to condemn two square blocks of ground, adjacent to the City Hospital, to provide room for extension.——St. Mary's Infirmary, St. Louis, is completing plans to erect a new clinic building and a new hospital to be devoted entirely to charity.

Court Sustains State Board in Briggs Case.—The circuit court at St. Louis has sustained the state board of health in revoking the license of Dr. Waldo Briggs, St. Louis, under a charge of "bad moral character." Briggs had appealed to the court on a writ of certiorari. Judge Miller made a decision sustaining the board without commenting on the argument of Briggs' attorney.——The finding of the state board was reversed in the cases of Drs. Archibald M. Ecklund and Spurgeon H. Barnett, St. Louis, and their licenses were ordered restored. The board found these two men guilty of making false statements concerning their education; their attorneys argued that the board had no authority to try them on that question as the law merely required applicants to show evidence of having a diploma from a medical school giving a four year course, whether or not the applicants had attended the full course.

Adcox Freed of Charges.—Dr. Robert Adcox, St. Louis, who had been indicted in connection with the medical diploma mills in Missouri, has been freed of all of those charges. Assistant Circuit Attorney Stack, says the St. Louis *Star*, confessed an error for the state in the bribery case in which Adcox was convicted and his punishment fixed at two years' imprisonment. A second bribery charge pending in the circuit court was nol prossed, Nov. 9, 1925, by the state. Attorney Stack pointed out that Adcox was now aiding the state in its suit to revoke the charter of the St. Louis College of Physicians and Surgeons and that the attorney general's office had stated in the Supreme Court that Adcox had been illegally convicted. It appears that at the time of Adcox' alleged bribery, the law did not permit country school superintendents to issue preliminary education certificates and, therefore, a superintendent could not be bribed to do that which he had no legal right to do.

The Adcox Confession (concluded).—It did not occur to Adcox that "Harry Thompson" was other than a salesman which his card indicated. He had heard Thompson inquire where he could find a physician and had seen the mail man direct him to his home. As usual, however, he investigated Thompson, and then turned him over to Ralph A. Voigt. Voigt not only looked up Thompson's references but employed a detective, and he reported that "Harry Thompson" had been the prospect's name at least for a long time. In October, 1923, Voigt wired Adcox that he was coming to see him; he was excited as some one had said that "Thompson" was an assumed name. Voigt insisted on finding Thompson, ostensibly to tell him he had arranged for him to get an Indiana license but really to get back the high school certificate, medical diploma and chiropractic diploma which Thompson had bought. The St. Louis *Star* had secretly photographed Voigt and Adcox with Thompson, and Thompson had introduced some "friends" who wanted medical "degrees." Having clinched its case, The *Star* published an extra, Oct. 15, 1923, with a facsimile of the diploma which Voigt sold to Thompson, who, it was then disclosed, was Harry Thompson Brundidge, a member of the staff of the *Star*, who had been assigned to this case. Adcox called up his home and learned that the circuit attorney was waiting to arrest him. He was taken to the police station, bond was arranged, and he learned that Voigt and others had been arrested in Kansas City. Adcox was sought by many persons. An attorney told him that, unless he arranged bond for one of his "associates," he would turn state's evidence; doctors (factory made) called to urge him to flee and to ask whether he intended to expose them; some offered money for his defense; others threatened, and Voigt demanded to know why he turned Thompson over to him. Adcox was eventually tried, convicted and sentenced to serve two years in prison.

NEW JERSEY

School Board Adopts Schick Test.—At a meeting of the board of education of Highland Park, Nov. 10, 1925, it was decided to adopt the Schick test and the use of toxin-antitoxin to immunize school children against diphtheria; the work will be purely elective with the parents.

Another Million for Science.—President Hibben announced, Dec. 20, 1925, that the General Education Board had given to Princeton University $1,000,000, to increase the equipment and facilities for research and advanced teaching in the biologic and physical sciences. The gift is conditional on Princeton's providing an additional $2,000,000 for the same purpose.

NEW YORK

Milbank Memorial Fund.—The second annual report of the health demonstrations conducted by the Milbank Memorial Fund in the city of Syracuse, rural Cattaraugus County, and in a congested district in New York, has been issued. These demonstrations were inaugurated to enable communities to use medical science in their daily routine, and to assist in applying this knowledge to the prolongation of life. The demonstrations have not been in operation long enough to trace the improvements noted entirely to them, but coincidently there has been a reduction in infant mortality in Cattaraugus County from 93 per thousand living births in 1923 to 65 in 1924; improvement is also indicated in the health of Syracuse; the demonstration in the Bellevue-Yorkville district, New York, is still in the inital stage. The board of supervisors of Cattaraugus County have voted to increase the public health budget from $16,000 in 1925 to $56,000 in 1926. The Milbank Memorial Fund is setting aside $325,000 annually for this and similar projects. During 1924 the fund's pledges for health and educational work were $809,750. Elizabeth Milbank Anderson established and endowed the Milbank Memorial Fund to "improve the physical, mental and moral condition of humanity, and generally to advance charitable and benevolent objects." The grants for philanthropic purposes now total $3,428,675.

New York City

Fourth Harvey Lecture.—James B. Collip, D.Sc., professor of biochemistry, University of Alberta Faculty of Medicine, Canada, will deliver the Fourth Harvey Society lecture at the New York Academy of Medicine, January 2, on "The Internal Secretion of the Parathyroid Glands."

Religion as Related to Health.—A group of clergymen affiliated with the Federal Council of Churches in America have offered their assistance to the New York Academy of Medicine in its investigation of religion as related to health. The investigation has just started, and will cover several months; as yet, it has not progressed sufficiently to warrant accepting the offer.

Medico-Legal Society.—At the annual meeting of the Society of Medical Jurisprudence at the New York Academy of Medicine, Dec. 14, 1925, Walter J. Carlin was elected president; Dr. L. Howard Moss, vice president; Dr. John E. Welch, treasurer, and Dr. Edward E. Hicks, recording secretary. This society was incorporated in 1885; it is composed of lawyers, physicians and chemists, and meetings are held once a month.

Statue of Balto Unveiled.—A bronze statue of Balto, leader of Gunner Kassan's team in the relief of Nome, Alaska, about a year ago, was unveiled in Central Park, Dec. 15, 1925, near Sixty-Seventh Street and the East Drive. It is one and a third times the size of Balto, and on a plate are these words, among others: "Dedicated to the indomitable spirit of the sled dogs that relayed antitoxin 600 miles over rough ice, through arctic blizzards, and across treacherous waters from Nenana to the relief of stricken Nome in the winter of 1925." The statue is the work of Frederick G. Roth. Balto was present at the ceremonies.

Hospital News.—The campaign to raise $1,000,000 for St Vincent's Hospital opened with a dinner at the Waldorf-Astoria, Dec. 2, 1925.——Friends of Mrs. George Emerson Brewer have donated in her memory a solarium to the new Presbyterian Hospital, which will be adjacent to the twelve bed ward to be dedicated in memory of the service in France of Base Hospital No. 2, which was commanded by Colonel Brewer. An endowment fund has been provided for the upkeep of the solarium and ward, although three of the twelve beds have not yet been endowed.——The Borough Park Maternity Hospital, Brooklyn, has opened its new three story, fireproof addition, and has reconstructed a large dwelling across the street from its main building to accommodate forty nurses.

State Asylum to be Skyscraper.—The New York State Psychiatric Institute and Hospital, to be erected at the Columbia-Presbyterian Medical Center, One Hundred and Sixty-Eighth Street and Broadway, will be a twenty story structure, costing $1,600,000 and construction work will start in February. The first ten floors will be devoted to hospital wards and rooms; the other ten floors to laboratories, museum, library, classrooms and other facilities for research; one entire floor will be set aside for mentally ill children. There will be a large outpatient department. The new building will accommodate 200 patients. Patients of special interest in connection with research in mental disease will be admitted in the new building, the others being sent to the regular psychopathic hospitals.

Tuberculosis and Health Association.—Twenty years ago the New York Tuberculosis and Health Association had a budget of $4,600, and for the current year it is $215,000, contributed by 90,000 persons through the purchase of Christmas seals. The children's service of the association during the last summer arranged to send 1,507 children to camps and fresh air homes, and provided dental treatment and instruction to nearly 7,000 children. The dispensary service comprises thirty-one tuberculosis clinics; the hospital service, among other things, provided 1,503 artists to give concerts in the tuberculosis hospitals to more than 10,000 patients; more than 700 eligible for work have been referred to the vocational service, and the health speaker service provided health lectures attended by 500,000 people.

OHIO

Emeritus Professors Appointed.—Dr. William H. Humiston, clinical professor of gynecology, and Dr. John M. Ingersoll, associate professor of otolaryngology, after many years of active teaching in Western Reserve University School of Medicine, Cleveland, were appointed emeritus professors, Dec. 15, 1925. The resignations of Dr. Emile Holman and Dr. W. J. Merle Scott were accepted by the board of trustees to permit them to accept positions at Leland Stanford University and Rochester University, respectively; appointments confirmed by the board of trustees included Dr. Frank S. Gibson, instructor in surgery; Dr. Raymond C. McKay, instructor in medicine; Dr. Clarence H. Heyman, associate visiting orthopedist to the Rainbow Hospital for Crippled Children, and Dr. Clyde L. Cummer, visiting dermatologist at Charity Hospital.

Society News.—Dr. Leora G. Bowers, Dayton, president-elect, Ohio State Medical Association, addressed the Eighth Councilor District at Lancaster recently on "Education for the Physician of the District." Dr. Bowers also recently addressed the Ninth District Medical Society at Gallipolis at the annual meeting.——Dr. R. Foster Kennedy, professor of clinical psychiatry, Cornell University College of Medicine, New York, addressed the Columbus Academy of Medicine recently on "Symptomatology and Diagnosis of Extending Lesions of the Brain."——Dr. Howard A. McKnight, Springfield, recently addressed the Clark County Medical Society on "Tuberculous Peritonitis."——Dr. George E. de Schweinitz, Philadelphia, formerly President of the American Medical Association, addressed the annual meeting of the Academy of Medicine of Cleveland, Dec. 18, 1925. ——Dr. Roy W. Scott addressed the Trumbull County Medical Society, Nov. 19, 1925, on "Coronary Disease and Angina Pectoris."——Dr. Oliver P. Kimball, Dayton, addressed the Butler County Medical Society at Miami University, Oxford, Nov. 25, 1925, on "Goiter Prevention."——Drs. Albert H. Freiberg and Russell P. Schwartz, Cincinnati, addressed the Academy of Medicine of Toledo and Lucas County, Dec 4, 1925, on "The Light Treatment of Surgical Tuberculosis in Low Altitudes: Its Significance and Technic."

OKLAHOMA

Society News.—Dr. Arthur S. Risser, Blackwell, president-elect of the state medical association, addressed the Woods County Medical Society, Nov. 24, 1925, on "Scientific Doctors."

Personal.—Dr. Dalton Bennett, Texanna, has been appointed county health officer of McIntosh County, to succeed Dr. McCullough of Checotah, resigned.——Dr. Raymond H. Fox, Altus, has been appointed physician for the Frisco Railroad to succeed the late Dr. William E. Sanderson, who has held the position for ten years.

PENNSYLVANIA

Dr. Keene Appointed Professor.—Dr. Charles H. Keene has resigned as director of health education in the Pennsylvania Department of Public Instruction, to accept appointment as professor of hygiene and director of physical education in the University of Buffalo.

Dr. Ostheimer Resigns.—Dr. Maurice Ostheimer, assistant professor of diseases of children, University of Pennsylvania School of Medicine, has resigned and also retired from the practice of Medicine and moved from Philadelphia to his country home at Whitford. Dr. Ostheimer was a teacher of pediatrics at the University of Pennsylvania for twenty-five years.

Philadelphia

Hospital News.—The Northern Liberties Hospital, Seventh and Brown streets, is conducting a campaign for $50,000. More than 20,000 persons, it is reported, received treatment at the dispensary of this hospital during the first year of its existence.

Society News.—Dr. Kirksey L. Curd addressed the Philadelphia Academy of Medicine and Allied Sciences, Dec. 21, 1925, on "Puerperal Sepsis."——The Northern Medical Association of Philadelphia held a symposium, Dec. 21, 1925, on gastric conditions, in which the speakers were Dr. John B. Deaver, Dr. Martin E. Rehfuss and Dr. Simon Wendkos.

SOUTH CAROLINA

Physician Sentenced.—Dr. James D Moorehead, Columbia, was sentenced, Nov. 9, 1925, it is reported, to one year and a day in the federal penitentiary at Atlanta for violation of the Harrison Narcotic Law.

Personal.—Dr. Pauline E. Dinkins has been appointed medical director of the Brewer Hospital, Greenwood, which serves the colored population of four counties, and which was established by the American Missionary Association of New York.——Dr. James M Beeler, Columbia, has been elected superintendent of the Spartanburg General Hospital.

TENNESSEE

University News.—The board of trustees of the University of Tennessee ratified, Dec. 14, 1925, the expenditure of $780,000 for the construction of the first unit in the $1,000,000 program of expansion of the medical department of the university at Memphis

TEXAS

Chiropractor Fails to Obtain Injunction.—The suit to restrain Attorney-General Moody from bringing action against chiropractor H. C. Allison, Fort Worth, on charges of violating the state medical practice act was dismissed, Dec. 4, 1925, it is reported, by federal judge Wilson, who set forth in a lengthy opinion that in consequence of decision handed down by the United States Supreme Court he could not grant the petition for a temporary injunction.

Pledge of Support.—At the annual banquet of physicians of southeast Texas, Beaumont, Dec. 18, 1925, Dr. Charles M. Rosser, Dallas, president of the Texas State Medical Association, spoke on "Enforcement of the Medical Practice Act"; at the close of this address the assembly of 400 unanimously pledged support in the campaign in progress in Texas. Dr. D. Stuart Wier, Beaumont, was toastmaster; among the speakers were former Lieutenant Governor Davidson and Dr. Marvin L. Graves of Houston.

WASHINGTON

Hospital News.—The contract has been closed for the first unit of a new county hospital for Pierce County, which will cost $100,000.

Personal.—Dr. Percy P. Cooley, Monroe, has been appointed county physician of Snohomish County.——Dr. Charles F. Eikenbary, Spokane, has been elected a member of the school board

"Major de Cercy"—Microscopes Renovated.—"Major Raymond de Cercy, French war hero, A.M.P.P.E.C.," seems to be renovating microscopes now in the vicinity of Tacoma (The Journal, Dec. 5, 1925, p. 1821). A physician writes that de Cercy, claiming to be a highly qualified technician, has taken hundreds of dollars by means of his fake service to physicians, clinics and laboratories in Tacoma alone. Our correspondent had a "sad personal experience" and has no recourse, as de Cercy has no permanent address.

CANADA

Society News.—Dr. Frederick W. Marlow, Toronto, recently addressed the Victoria County Medical Society at Lindsay on "Symptomatology of Pelvic Diseases."——Dr. Norman B. Gwyn addressed the Hastings County Medical Society recently at Trenton on "Early Diagnosis and Treatment of Pneumonia and Empyema."

Health Commission Curtails Activities.—The Massachusetts-Halifax Health Commission has closed the health center at Admiralty House, Halifax, and also at the Dartmouth center;

a few clinics are being continued in the north end of Halifax as well as those at the Dalhousie Health Center. The laboratory work has been discontinued and the number of public health nurses reduced. The *Journal of the Canadian Medical Association* says that with these restrictions the commission will be able to continue its work for at least two years more.

Association Discontinues Press Articles.—The Canadian Medical Association has decided to discontinue for the present the syndicated weekly health articles to some twenty newspapers which it served in this manner during the last year. The reason is that this department would cost for the next year $2,000, and there are many other agencies prepared to supply health articles gratuitously. The executive committee feels that the service has already accomplished what it set out to do; that is, it established sympathetic relations between the Canadian Medical Association and many other organizations.

Personal.—Dr. John A. MacDonald, St. Peters, Nova Scotia, was elected to the Parliament at Ottawa at the recent federal election.——Drs. Lorne J. Violette, Benjamin H. Dougan and Henry I. Taylor, all of the province of New Brunswick, were recently elected to the legislature.——Dr. William F. Roberts, who for eight years has been minister of health, will retire from public life as a result of the defeat of the New Brunswick government in the recent provincial elections.——Dr. Joseph K. Breitenbecher, former professor of zoology at the University of Oklahoma, is now on the teaching staff of that department at McGill University, and will also do research work.——Dr. Donald C. Smelzer, formerly associate superintendent, Montreal General Hospital, has been appointed superintendent of the Charles T. Miller Memorial Hospital and the Amherst Wilder Dispensary, St. Paul. Dr. Smelzer, for the last two years, has been with the Buffalo General Hospital.——Dr. Thomas Digby Wheeler recently won the Frosst trophy among medical golfers of Winnipeg.——Dr. James A. Gorrell, Manitoba, has resigned from the surgical staff of the Children's Hospital on account of ill health.——Dr. William Egbert of Calgary, Alberta, has been appointed lieutenant governor of the province. The Calgary Medical Society recently presented Dr. Egbert with a traveling bag on the occasion of a special meeting in his honor.

GENERAL

Abstracts in Spanish.—*Southwestern Medicine* began with its December issue to include abstracts in Spanish of the principal items in that journal, and will invite physicians in northern Mexico to become affiliated with the Medical and Surgical Association of the Southwest.

Principal Causes of Death in 1924.—The Department of Commerce announces that in the death registration area of the United States in 1924, there were 1,173,990 deaths, representing a death rate of 11.9 per thousand of population, as compared with with 12.3 in 1923, 11.8 in 1922 and 11.6 in 1921. There was a decrease in the death rate from influenza from 44.7 per thousand of population in 1923 to 19.6 in 1924, and from pneumonia from 109 to 98.4. There were slight increases in the death rate from heart disease, cancer and automobile accidents.

Gifts to Community Trusts. — Senator James Couzens is reported as having administered through the Detroit Community Trust an initial fund of $100,000 for physically handicapped persons.——The Harris Trust and Savings Bank of Chicago has received as trustee, according to *Community Trust Story*, $1,500,000 for the Chicago Community Trust from Mr. James A. Patton, largely for educational purposes.——Wills recently probated in Cleveland brought an addition of $300,000 to funds held for the Cleveland Foundation.——The citizens of Winston-Salem, N. C., have raised a fund as a memorial to a boy of that city who recently met his death in an athletic contest. The fund will be administered for the Winston-Salem Foundation by the Wachovia Bank and Trust Company.

Society News.—At a meeting of the Western Surgical Association, Wichita, Kan., Dec. 18-19, 1925, Dr. Robert C. Coffey, Portland, Ore., was elected president; Drs. Neil J. McLean, Winnipeg, Canada, and Vilray P. Blair, St. Louis, vice presidents; Dr. Harry P. Ritchie, St. Paul, secretary, and Dr. Frank R. Teachner, Kansas City, Mo., treasurer. The next meeting will be in Duluth, Minn., probably late in September. Twelve new members were elected at this meeting.——Dr. Hubert A. Royster, Raleigh, N. C., was elected president of the Southern Surgical Association at the meeting in Louisville, Ky., Dec. 17, 1925; Drs. Louis Frank, Louisville, and Frank K. Boland, Atlanta, Ga., vice presidents, and Dr. Robert L. Payne, Norfolk, Va., secretary. Dr. Royster has been secretary of the association for nine years. The next meeting of the association will be in Biloxi, Miss.

Travel Study Club.—Plans have been completed for a tour of European centers by the Travel Study Club of American Physicians. The party will sail, June 12, from New York and visit medical centers in Stockholm, Oslo, Copenhagen, Hamburg, Cologne, Wiesbaden, Heidelberg, Strasbourg, Berne, Zurich, Leysin, Geneva, Paris and London, returning to New York, August 8. Membership is open to physicians of good standing, but the party is limited to not more than fifty physicians and not more than twenty-five nonmedical persons (families and friends), thus limiting the party to seventy-five. Applications for membership and further information should be addressed to Dr. Richard Kovacs, secretary-treasurer, 223 East Sixty-Eighth Street, New York, or to Raymond and Whitcomb, 225 Fifth Avenue, New York, who are the business managers of the tour. The tenth annual reunion of the Travel Study Club will be during the meeting of the American Medical Association, Dallas, Texas, April 19-23.

New County Society Presidents.—The following physicians have recently been elected president of the county medical society indicated:

Dr. Mott H. Arnold, San Diego, Calif., San Diego County Medical Society.
Dr. Samuel J. Bradfield, Bartlesville, Okla., Washington County Medical Society.
Dr. James E. Crawford, Tulia, Texas, Hale-Floyd-Swisher-Briscoe County Medical Society.
Dr. Charles D. Cupp, Breckenridge, Texas, Stephens County Medical Society.
Dr. John Wilson David, Corsicana, Texas, Navarro County Medical Society.
Dr. Stephen A. Edwards, Van Wert, Ohio, Van Wert County Medical Society.
Dr. John C. Erwin, Jr., McKinney, Texas, Collin County Medical Society.
Dr. Joseph K. B. Evans, McGuffey, Ohio, Hardin County Medical Society.
Dr. Irl E. Hempstid, Hutchinson, Kan., Reno County Medical Society.
Dr. Abby M. Henderson, Niles, Mich., Berrien County Medical Society.
Dr. Henry C. Heuck, Sigel, Ill., Effingham County Medical Society.
Dr. Arthur W. Irwin, Oswego, N. Y., Oswego County Medical Society.
Dr. Harry C. Johnson, Antlers, Okla., Pushmataha County Medical Society.
Dr. Chester E. Joss, Topeka, Kan., Shawnee County Medical Society.
Dr. Howard M. Leinbach, Reading, Pa., Berks County Medical Society.
Dr. William P. McKee, Eustis, Fla., Lake County Medical Society.
Dr. Robert P. Nall, Armorel, Ark., Mississippi County Medical Society.
Dr. Peter Noe, Willsboro, N. Y., Essex County Medical Society.
Dr. John P. Stewart, Frankfort, Ky., Franklin County Medical Society.
Dr. Albert E. Stickley, Coopersville, Mich., Ottawa County Medical Society.
Dr. Samuel L. Stringfield, Waynesville, N. C., Haywood County Medical Society.
Dr. Andrew Struble, Glasco, Kan., Cloud County Medical Society.
Dr. George T. Tyler, Greenville, S. C., Greenville County Medical Society.
Dr. John O. Weaver, Shenandoah, Iowa, Page County Medical Society.

News of Epidemics.—Eight girl students of the Michigan State College developed typhoid fever following a church dinner at Eaton Rapids, Nov. 18, 1925, the state health officer recently reported; also several residents of that city and two residents of Lansing; there were seventy students in the party, and all were examined for typhoid before being permitted to go home for the holidays.——The outbreak of smallpox at Wapato, Wash., totaled twenty-three cases, Dec. 13, 1925.——The scarlet fever epidemic in Spokane, Wash., was still spreading, Dec. 13, 1925, when there were 101 cases under treatment in the city, forty-five new cases having been reported thus far that month. There had been no deaths in the outbreak since October.——The measles epidemic in Yonkers, which started about October, had caused sixteen deaths and 1,400 cases up to Dec. 14, 1925.——There was an outbreak of fourteen cases of smallpox in Gibson County, Tenn., and another of twenty-five cases of measles in the Franklin School of Lebanon, Pa., reported, Dec. 15, 1925.——There were eleven cases of scarlet fever under quarantine in Breensburg, Pa., Dec. 4, 1925.——An outbreak of fifty cases of whooping cough in the public schools of North Attleboro was reported as of Dec. 4, 1925.——There were three cases of smallpox at Carrollton in one family reported, Dec. 3, 1925.——More than 100 cases of measles were reported in Ypsilanti, Mich., Dec. 10, 1925.——No. 2 school in Jacobs Chapel community, northeast of New Albany, Ind., was closed by the county health commissioner, Dec. 4, 1925, on account of an outbreak of scarlet fever.——There was an outbreak of several cases of smallpox on the outskirts of Danville, Va., reported, Dec. 8, 1925.——Orders were issued, Dec. 7, 1925, excluding all unvaccinated students from the Ohio State University and the Indianola School, Columbus, Ohio, following the discovery of a case of smallpox in the university.

——An epidemic of about fifty cases of smallpox was reported in Maury County, Tenn., Dec. 8, 1925; health officials had appealed to the state department for assistance.

FOREIGN

Prize for Work on Tuberculosis.—The *Gazzetta degli osbedali* states that the Forlanini endowment offers a prize of 10,000 liras for the best work offered in competition on the pathologic anatomy, pathogenesis or treatment of pulmonary tuberculosis. The work must be received (eight copies) by the Ospedale Maggiore at Milan, Italy, before Dec. 31, 1926.

National Medical Congress in Japan.—The seventh session of the National Medical Congress will be in Tokyo, March 31-April 6, 1926, under the presidency of Dr. Sankichi Sato. There are now twenty-three sections, new sections having been added since the sixth session in physiology, biochemistry, pharmacology, roentgenology, tuberculosis and medical instruments. Among others, Profs. G. Kato, I. Matsuo and Y. Asahina will give special lectures.

Society News.—The officers of the American Medical Association of Vienna, which is organized for the systematic promotion of international postgraduate study and whose address is Alserstrasse 9, Vienna, VIII, are, president, J. S. Budyk, Montreal; vice president, Edward D. Allen, Chicago; secretary, Edward A. Pinkus, Brooklyn, and treasurer, Jabez A. Mahan, Ellensburg, Wash.——The ninety-fourth annual meeting of the British Medical Association will be held at Nottingham under the presidency of Mr. R. G. Hogarth, who will deliver his address to the association, July 20. The association last met in Nottingham in 1892.

John Irvine Hunter Memorial Fund.—The committee of the John Irvine Hunter Memorial Fund announces in the *Medical Journal of Australia* that contributions, Oct. 31, 1925, totaled more than £1,309. The fund hopes eventually (1) to provide a portrait of Dr. Hunter for display in the great hall of the University of Sydney; (2) to provide a bust of Dr. Hunter for the Medical School at the University of Sydney; (3) to establish an annual oration on some subject of original research, and a medal; (4) to institute a library to contain all current, scientific and medical literature and works of reference in each branch of medicine; (5) to establish a laboratory for clinical research work for which the New South Wales government will be requested to provide the building, and (6) to offer annual scholarships in the laboratory to research workers.

Personal.—Dr. James G. Sleeman, Adelaide, Australia, has been appointed superintendent of the Adelaide Hospital.——A Swiss exchange mentions that Dr. Edwin Bramwell, Edinburgh, is to deliver a course of lectures on multiple sclerosis and brain tumor at Basel as interchange professor.——Dr. Z. Glorieux, inspector general of the institutions for the insane and feebleminded in Belgium, has reached the retiring age; his portrait was unveiled at the Collège des médecins at Brussels, the tribute terminating with a banquet.——Honorary degrees have been conferred by the Sorbonne, Paris, on Drs. Pawlow, Leningrad; Noguchi, New York, and Sir Ernest Rutherford, Cambridge.——Nine persons, all physicians but one, formed the board at Paris for the state examination of blind candidates as certified masseurs. Dr. Fabre is the founder and director of the school for training the blind in this work.

Deaths in Other Countries

Sir Charles Brown, consulting medical officer, Preston Royal Infirmary, and former vice president of the section of medicine of the British Medical Association, Nov. 23, 1925, aged 89.——**Dr. Bela Török**, professor of otology, Budapest.——**Dr. F. Schnopfhagen**, director of the state insane asylum, Niedernhart, Austria.——**Dr. E. de Smet**, emeritus professor, Brussels, aged 83.——The *Gaceta Médica Asturiana* mentions the death of **Dr. Puelles**, Seville, as another victim of the professional use of the roentgen rays.——**Dr. Desnos**, Paris, first president of the International Urologic Society, on a medical mission to French India, died recently at Pondicherry.——**Dr. G. Piza e Almeida**, São Paulo, formerly minister from Brazil to Germany and to France, graduate of the University of Pennsylvania school of medicine, died in Paris recently, aged 74.——**Dr. G. Puppe**, professor of forensic medicine, Breslau, and writer on medicolegal and social medicine topics, succumbed to embolism of the saphenous vein, aged 58.——**Dr. M. Oberst**, emeritus professor of surgery, Halle, aged 77.——**Dr. M. Kirchner**, Berlin, long at the head of the public health system of Prussia before the war, aged 72.——**Dr. Albert Cauchoix**, Paris, surgeon to the municipal public health service, aged 46.

Government Services

Annual Report of Veterans' Bureau

In the Annual Report of the United States Veterans' Bureau, just issued, Gen. Frank T. Hines, director, recommends the enactment of legislation by Congress to create a medical corps in the bureau similar to that which exists in the army and navy. "One of the first and most necessary steps toward raising the standard of this medical service," says Director Hines, "is to make it sufficiently attractive to secure and retain well trained, conscientious physicians, a large percentage of whom must have special knowledge in the fields of medicine, particularly diseases of the lungs, and neuropsychiatry."

This recommendation of the director has the support of the medical council of the bureau and of the ex-service men's organization. It is believed that President Coolidge approves the plan of creating this medical corps in the bureau, and it is probable that legislation proposed in Congress, on the subject of the United States Veterans' Bureau, will include this provision

The most important addition to the medical service of the Veterans' Bureau is stated by Director Hines to be the creation of the medical council. The function and purposes of this council are for the elevation of the character of medical service of the bureau. The council consists of physicians, and experts of national prominence, who are specialists in tuberculosis, neuropsychiatry, internal medicine, surgery, hospital administration and medical research. Stated meetings are held quarterly with the medical director and staff for the consideration of the medical problems of the bureau. Members of the medical council visit the hospitals and various offices of the bureau throughout the country for the purpose of improving the service and administration of the medical corps. As a result of the activities of the medical council, a section on medical research was established. The functions of this section are to study available medical data by which the results accomplished by the bureau might be measured, investigation of the character of clinical work, and the promotion and encouragement of research work. The establishment of two diagnostic centers for the study of cases presenting difficulties of diagnosis, or which are the subject of medical controversy, is also the result of the recommendations of the medical council. These diagnostic centers are at the Cincinnati General Hospital and the U. S. Veterans' Hospital No. 32, Washington, D. C.

Gross expenditures at veterans' hospitals during the fiscal year amounted to $28,803,845.19, or $6,750,590.29 more than was expended during the preceding fiscal years. Of this increase, $2,186,442.81 occurred at tuberculosis hospitals, $1,358,808.74 at general hospitals and $3,205,338.74 at neuropsychiatric type hospitals. The net operating expense for hospitalization, which does not include expense for new construction, nonexpendable equipment, or services performed to outpatients, was increased by $4,166,080.26, in comparison with similar expenses for the previous fiscal years.

A study of the deaths in United States Veterans' hospitals indicates that the deaths from tuberculosis, neuropsychiatric and general medical conditions, are in the ratios 66, 13 and 21. This low death ratio of neuropsychiatric patients would suggest that future hospitalization will deal very largely with this type of patient, particularly when this fact is substantiated by the evidence set forth in the total hospital load; that is, that even though the admissions for the year are 19.70 per cent neuropsychiatric, to 28.54 per cent tuberculosis, the comparatively low turnover in neuropsychiatric hospitals results in the current hospital load being in the ratio of 44.55 neuropsychiatric to 35.04 tuberculosis.

Entrance Examination for Public Health Service

Surg. Gen. Hugh S. Cumming announces that there will be an examination for entrance into the regular corps of the Public Health Service, February 8, at Washington, D. C., Chicago, New Orleans and San Francisco. The candidates must be not less than 23 nor more than 32 years of age, must have graduated from some reputable medical college and have had one year of hospital experience, or two years of professional practice. They must pass oral, written and clinical tests and a physical examination. Request for permission to take the examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 5, 1925.

Treatment of Seamen Suffering from Venereal Disease

An international agreement for the treatment of seamen suffering from venereal disease has been ratified by the British government. The contracting parties undertake that facilities shall be available at each of their chief sea and river ports, for the gratuitous treatment of merchant seamen, without distinction of nationality. Such facilities are to include outpatient treatment, inpatient treatment when the medical officer of the treatment center considers it to be necessary, and sufficient medical supplies to carry out necessary treatment during the voyage to the next port of call. The agreement also requires that each patient shall be supplied with a card for providing a brief record of the diagnosis of his case, the treatment given and the treatment to be followed during the voyage. Apart from the provision of medical supplies during the voyage to the next port, the necessary arrangements are already in force in this country, and the minister of health will be pleased to approve the supply to a seaman patient for his treatment during the voyage to the next port of such drugs, dressings and appliances as the medical officer of the treatment center considers necessary and as, in his opinion, can safely be used by the patient himself.

Evolution and the Book of Genesis

In the first of a series of luncheon hour addresses delivered in a London church, Sir Oliver Lodge said that the first two chapters of Genesis represented two different accounts of the origin of the world and the origin of man. Each account had certain inspirations and certain crudities of its own, but both had appealed to the heart of humanity and represented the most poetic description ever given of the origin of all things. Familiar to everybody, they had sometimes been regarded as scientific statements of facts. But science did not deal with ultimate origins; it took the universe as a going concern and tried to explore it, to see how one thing followed from another, to perceive the links by which they were connected, and to follow it into the future and perhaps trace it back into the past. Time was of the essence of evolution. Time was an element which we could not dispense with, whatever its ultimate meaning might be; it was infinite and we were finite. We could proceed only a little way. Poetry and imagination, however, could assist science. Reason was a great faculty, the importance of which could hardly be overestimated, but it was a mistake to say that it dominated the whole field. As Pascal said, there were two errors, one to ignore reason, and the other to attend to reason only. What inspiration was had not been truly defined, but he believed that inspiration existed. We must regard the first two chapters of Genesis as poetry and dig out their inner meaning by getting below the crust of the superficial and accidental, the mere form or skeleton in which they were framed. Looked at in this way, what was the first chapter? First of all, it was the perception that in the beginning of time—if there was a beginning, and whether there was a beginning or not—there was the brooding of a divine spirit or mind at work planning and executing. Some said that the process of evolution required no mind, no plan. They were going beyond anything they knew. They were not rational. If they said that evolution was the process by which the power worked, they would be right. There was an unfolding, a development. Things did not come into existence all at once. As the tree grew from the seed and the flower from the bud, the process was gradual. Time was involved. How much time was only a question of degree. How did we know that everything was not automatic, haphazard and mechanical? He would not argue against that, for the only philosophers who could think that were the philosophers of Laputa, who sought to make books by throwing together letters at random. It was quite evident that there was nothing random in the universe. An automaton—however automatically it worked—was the creation of mind. The next ingredient in the first chapter was that cosmos sprang from chaos. What were "the heavens and the earth," the universe, as we now called it, composed of? Two units, two minute elements of electricity, positive and negative. These two fundamentals were united by a third, an intangible something, called radiation or ether, and popularly known as light. But for the welding and unifying influence of ether the atoms of matter would be chaos. How they originated, who was to say? Science did not deal with origins. Even poetry had to close its eyes when confronted with ultimate origins. It could only murmur the words, "In the beginning, God."

Another Martyr to the Roentgen Rays

Mr. Reginald G. Blackall, the roentgen-ray pioneer of the London Hospital, has died from the effects of disease due to his occupation. He joined the London Hospital in 1902 and was one of the earliest workers with the roentgen rays, at a time when it was not known how dangerous it was to be exposed to the rays all day long. But even when he did know the danger he stuck to his post, although one of his fellow workers lost both arms and another his life. He himself contracted carcinoma, and both his hands had to be amputated. He retired in 1920. The Carnegie Hero Fund awarded him in December, 1923, its honorary certificate and a grant of $375 a year. The hospital allowed him a pension of $1,425 a year and insured his life for a substantial sum for the benefit of his wife and children.

The Health of Students at "Civic" Universities

Dr. Adami, vice chancellor of Liverpool University, speaking at the annual meeting of the university court, commented on the poor physical state of many of the students at "civic" universities, as compared with those of Oxford and Cambridge. He suggested that compulsory medical and physical examination be instituted and advice given as to the special form of exercise to be taken. An inquiry in the summer term brought to light the fact that only some 300 students, at the most, indulged in sports and games. At Oxford and Cambridge there was a well established tradition that in most of the schools no lectures were given in the afternoon, so that at least an hour, if not the whole afternoon, was spent in the open air, in games and country walks and on the river. To the bulk of the undergraduates coming from public school, open-air exercise became second nature. In Liverpool and other "civic" universities, most of the students came from municipal secondary schools in densely populated districts where opportunity for open-air play was seriously restricted. The students were on an average in a distinctly poorer physical state, and at the university the freedom for exercise was limited to Wednesday and Saturday afternoons.

The Tsetse Fly Problem

The Society for the Preservation of the Fauna of the Empire has issued a pamphlet entitled "The Tsetse Fly Problem and Its Solution." It deals with the theory, which has many supporters in official circles in South Africa, that the destruction of big game and the abolition of game reserves are the simplest and best method of dealing with fly-borne diseases of animals and men. Species of tsetse fly, which belong to the genus *Glossina,* subsist in their adult stage solely on blood and spread nagana among live stock and trypanosomiasis among human beings Certain game animals carry the organism of nagana in their blood The assumption that big game constitutes a sort of reservoir of infection has led to drastic proposals for its extermination in order to break the chain of infection The pamphlet controverts this view It points to the large number of species of tsetse fly with divers habits, habitats and victims Till more is known of their distribution and life history, it is impossible to say whether the suggested measures against game would have the desired effect The disappearance of the fly from the northern Transvaal has been popularly ascribed to the destruction of game animals But recent investigation suggests that this belief may be erroneous In certain areas, disease-bearing tsetse species have survived the destruction of game, while other attempts to kill off game animals have simply driven them and the fly into other areas In one locality the destruction of game was followed by a violent outbreak of trypanosomiasis which cost several hundred lives Experts even suggested that the killing of the game may have diverted the fly to man Big game also reduces the thickets, which harbor the tsetse fly, by eating down the brushwood The pamphlet suggests that the serious and complex problem presented by the disease-carrying flies can be solved only by a combination of methods which will not necessarily involve the destruction of game reserves, and that before interfering drastically with the balance of nature it would be well to examine the local conditions in every case

Physician Removed from the Register for Using the Press to Obtain Patients

The general medical council had before it the complaint of the British Medical Association against a physician who sought to promote his practice by publishing in the *Daily Mail* an article entitled "Hay-Fever, New Treatment, Specialist's Report, Patients Cured" The case was peculiar in that his name did not appear in connection with the article, but a number of persons who read it wrote to the *Daily Mail*, which forwarded the letters to the defendant, who then wrote to them inviting appointments In his defense, he stated that a member of the staff of the *Daily Mail* consulted him as a patient for hay-fever They discussed the treatment as physician and patient, and it was said that the subject would make an interesting article and that the physician might write one on the treatment He replied that "he hoped and prayed that his name would not be disclosed, owing to his enormous practice" The next morning an article appeared, but he saw nothing of it until it was published He had no clue of what use would be made of what he said about the treatment He had two secretaries who saw to his correspondence He had no communication with the *Daily Mail* and did not authorize it to give his name and address to readers who wrote to it in consequence of the article He was asked whether he would pick some cases from those who made inquiries, but he merely said he would see some cases It was not by his instruction that his secretary sent his professional cards to persons who had been selected from those who made inquiries He had no desire to seek any professional advantage from the article He had no need of any advertisement He was now very sorry he had anything to do with the matter, and as far as he might have offended against professional etiquette, he tendered his apology He saw the journalist after the article was published and protested However in cross examination he admitted that he was not calling the journalist as a witness, and also that he did not write to the *Daily Mail* protesting against the publication The case was considered proved, and the council ordered his name to be erased from the register This decision has met with a good deal of criticism from the public and the press, which persist in regarding the council as a medical body actuated by professional prejudices The fact that it is acting in the interest of the public by protecting it against quackery is not appreciated Even the *Times* errs It refers to the British Medical Association (the complainant in this case) as 'a doctors' club concerned primarily with the interest of its members" It says that the contention of the association that 'the public is ill qualified to judge of the true worth of scientific opinion" is not surprising It rejoins that "the medical profession itself—as its attitude to Harvey, to Pasteur, to Lister and to a host of lesser discoverers has shown—is sometimes less qualified in this respect even than the public ' However, it admits that the general medical council is a statutory body set up by parliament, that is, by the public, to preserve the public interest as opposed to the interest of doctors But it asks whether it is not in the public interest that 'reliable information about new work in the field of medicine should be freely published ' In the case of the physician in question, it states that "benefit was conferred on the patient who wrote the article, who not unnaturally sought to bring news of the relief to other sufferers' In consenting to see them, the physician "was acting in good faith and according to the dictates of humanity Has the council ceased to be able to discriminate between professional and public interests?' This from the *Times*, which is generally well informed in medical matters, is surprising and shows the extent to which sympathy with all kinds of irregular practice prevails in high quarters Of course, to say that this physician furnished "reliable information" is a gratuitous assumption As a matter of fact, he declared that, though the result of his conversation with the journalist, the article was erroneous The *Times* does not appear to realize how easy it is for any one, whether in the profession or outside it, to pretend to a much greater knowledge than he possesses and to inspire faith in the public But the mark of all such persons though living in the medical Mecca of London and described in the lay press as "eminent specialists," is that they never contribute anything to medical knowledge, though their claims to skill are unbounded Populus vult decipi et deceptus est The charge against this physician of attracting patients by advertisement was clearly proved, and the argument of the *Times* is both unsound and irrelevant to the issue

PARIS

(From Our Regular Correspondent)

Dec 7, 1925.

Leprosy in France

M Jeanselme, in the name of the commission of which he is the spokesman presented recently to the Academy of Medicine the results of the inquiry into the incidence of leprosy in France The old centers of infection, known since the Middle Ages, have been very nearly eradicated, but the influx of foreigners from infected countries is constantly increasing There are at present from 160 to 200 lepers in Paris and a considerable number also in the large maritime ports A large number of the poorer lepers are vagabonds, who are constantly changing their habitation The well-to-do patients sojourn at the mineral springs or at other large centers Both classes constitute a grave danger for their environment Jeanselme recommended the adoption of (1) compulsory notification of leprosy, (2) clinical and bacteriologic examination at regular intervals of lepers and of their entourage, and (3) creation of centers for the segregation and treatment of lepers

Physiologic Researches on the Resorption of Oil Injected Subcutaneously

M Leon Binet recently presented to the Sociéte medicale des hopitaux de Paris an outline of researches that he has made on the resorption of oil injected subcutaneously Injections of oil are used to a great extent in therapeutics. His experiments were carried out with guinea-pigs, rabbits and dogs, which were given subcutaneous injections of various kinds of oil, sometimes with additions of diphenylanthracene (which renders them fluorescent) or colored with sudan III. The author was able to follow oil introduced in the subcutaneous tissues. The principal fact elicited is the rather slow rate at which oil is resorbed; it may remain in situ for weeks and months. These experimental facts agree with the persistence in man of spots unpenetrated by roentgen rays after injections of iodized oil.

Some animal oils are resorbed much more rapidly than the vegetable oils. At the end of four months, caballine oil injected in the cellular tissues of the rabbit has completely disappeared, while olive oil injected in the same quantity persists almost in toto. As to the changes that injected oils undergo in situ, the author emphasizes first of all their diffusion. They spread out; they reach the subcutaneous tissues and the interstices in the muscles, where they are divided into droplets, which become encysted, as it were. The walls of these minute cysts become infiltrated with cells—mainly mononuclears. In the leukocytes are oily vacuoles not colored by sudan III though the injected oil is itself colored. After a stay in the tissues, the acidity of the injected oil may be from four to five times greater than it was at first. These chemical changes point to saponification, with liberation of fatty acids, which may be considered a local digestion This digestion seems to be the work of leukocytes—mononuclears mainly, which, as Fiessinger has shown, are capable of secreting an active lipase.

Binet reported also the result of researches on the behavior of substances in emulsion or in combination with injected oil. Camphorated olive oil (10 per cent) showed disappearance of half the camphor after two hours; of 75 per cent after five hours, and of almost all the camphor after nine hours, while the oil remained in situ for months.

Binet sums up his conclusions thus: 1. Oils injected subcutaneusly are resorbed very slowly. 2. Some animal oils (caballine oil) are resorbed more readily than others. 3. The resorption is the result of an accession of leukocytes, which causes encystment and digestion of the injected oil. 4. Substances dissolved in the oil may be absorbed independent of the oil.

Alternate Artificial Pneumothorax

In 1911, Forlanini published the histories of two patients cured, by artificial pneumothorax, of unilateral pulmonary tuberculosis, in whom later he instituted artificial pneumothorax of the opposite lung, in order to get control of a lesion that had developed there. He emphasized the satisfactory manner in which the lung that had been collapsed for several years had taken over the respiratory function when the second pneumothorax was instituted, and stated that these facts disproved the theory of the marked sclerogenic effect of artificial pneumothorax. Also E. Rist, whose service in the Laënnec Hospital is an active center for the treatment of tuberculosis, presented recently, in collaboration with his pupil Chabaud, before the Société médicale des hôpitaux de Paris, two patients treated successfully by the method of alternate artificial pneumothorax. The first patient had a cavity of the right lung, which seemed to date from January, 1920. Artificial pneumothorax was instituted in February, 1920. After forty-three months of collapse therapy and thirty-five months with negative sputum, a cavity developed in the superior lobe of the left lung. Pneumothorax of the right lung was discontinued, and in December, 1923, pneumothorax of the left lung was instituted. Excellent condition has been maintained for twenty-one months. There has been negative sputum for seventeen months. The second patient had a cavity of the left lung, which seemed to date from June, 1920. Artificial pneumothorax was instituted in August, 1920. After three years of apparent cure, with no bacilli in the sputum, infection appeared in the other lung in August, 1923. Pneumothorax of the left lung was at once discontinued, and in January, 1924, pneumothorax of the right lung was established. The result has been good, and the patient has been able to work moderately. A few bacilli were still found in the sputum for thirteen months. No bacilli have been found in the sputum since May 3, 1925.

Alternate artificial pneumothorax requires great care and perseverance on the part both of the patient and of the physician. Infection in the opposite lung must be discovered promptly, and an opportune time must be chosen for the collapse of the lung secondarily infected. It may be desirable, in some cases, to accelerate the resorption of the first pneumothorax by withdrawals of gas. Sometimes, too, it may be best to create the second pneumothorax before the first has been entirely resorbed.

The statistics of Dr. Rist include twenty cases of alternate pneumothorax instituted to combat tardy involvement of the opposite lung. Seven of these twenty cases resulted fatally. In two cases, exacerbation of the patient's condition was prompt and death ensued soon. Five patients have remained thus far in the status quo ante, while six patients have made favorable progress up to the present time. The average duration of the second pneumothorax in the stationary and ameliorated cases has been about fifteen months. These figures can be better appreciated if they are compared with the mortality figures in patients subjected to a primary artificial pneumothorax, but not to a secondary pneumothorax, on the discovery of lesions in the opposite lung. Three months after the onset of the secondary infection, 40 per cent of the patients with simple pneumothorax had died, as against 16 per cent of those with alternate pneumothorax. At the end of six months, the mortality rates were, respectively, 60 and 25 per cent; at the end of one year, 74 and 41 per cent in favor of secondary pneumothorax. The results in favor of secondary pneumothorax are thus appreciably better, and these results can be further improved.

BELGIUM

(From Our Regular Correspondent)

Nov. 30, 1925.

Gastrojejunocolic Fistulas

At a recent meeting of the Cercle médical of Antwerp, Dr. Verbrugge presented a monograph on gastrojejunocolic fistulas. He distinguishes four etiologic groups: (1) of congenital origin; (2) of traumatic origin; (3) due to primary lesions of the abdominal cavity: of gastric origin (cancer or ulcer); of extragastric origin (cancer of the colon); tuberculosis; abscess, and (4) fistulas resulting from gastro-enterostomy. He dwelt at length on fistulas that develop after gastro-enterostomy, and emphasized the necessity of suppressing all the septic foci in a patient operated on. M. Gunsburg pointed out the importance of postoperative medical treatment of gastro-enterostomy patients as a prophylactic measure against jejunal ulcers, and, consequently, of gastrojejunocolic fistulas.

Third Congress of Dermatology and Syphilography

The third Congress of Dermatology and Syphilography will be held in Brussels in 1926, under the chairmanship of Professor Morelle. Dr. Dekeyser is the general secretary of the congress. Papers will be presented on: (1) tuberculids, their nature and treatment, by Pautrier (Strasbourg) and Schaumann (Stockholm); (2) herpes and zona, together with their etiology, by Levaditi (Paris) and another author to be determined; (3) purpura, by Lespinne (Brussels), Roskam (Liége) and P. E. Weill (Paris); (4) syphilitic reinfection, pseudoreinfection and superinfection, by R. Bernard (Brussels), Carle (Lyons) and Marcel Pinard (Paris); (5) endocrine disorders of heredosyphilitic origin, by André Léri and Barthélémy (Paris), and Nicolas and Gaté (Lyons), and (6) the present status of lupus therapy, by P. François (Antwerp), Halkin (Liége) and L. Dekeyser (Brussels).

Relations of Polish and Belgian Scientists

The *Bruxelles médical* announces that Poland and Belgium have signed a scientific relations agreement. The object is to bring Belgium and Poland into closer intellectual relations by developing mutual interest in the scientific and pedagogic progress of the respective countries and thus facilitate their constant collaboration. Interchange of professors and students is one of the methods proposed.

Anesthesia in Relation to Respiratory Volume

M. Ide, speaking before the Belgian Royal Academy of Medicine, recently, questioned P. Bert's affirmation that the absolute quantity of chloroform inhaled has no significance, and that only the gaseous tension of the narcotic is important. His experiments lead him to believe that the effects will vary with the respiratory capacity. Cardiac, febrile, uremic, diabetic, exophthalmic goiter and certain neurotic patients may present excessive intolerance because of their exaggerated respiratory volume. One should always take account of the respiratory volume in the study of general narcosis and in the dosage of chloroform and ether.

Government Control of Arsphenamines

In previous letters I have referred to the fact that the Belgian government had established supervision of arsphenamines. Unfortunately, when government agents establish the inferior quality of certain products, the Belgian government has not the authority to destroy the defective lots. The result is that products rejected in Belgium may be sold in other countries. M. De Myttenaere pointed out this fact at the French Congress, held at Liége, in 1924. The congress passed a resolution that careful supervision of antivenereal arsenicals should be carried out before the drugs are employed. The congress approved the methods of control in use in Belgium and suggested to the French government that it apply to these drugs the tests used by the Belgian government. M. De Myttenaere has explained before the Belgian Academy of Medicine the methods that are employed in Belgium. In conclusion, he said: "All the arsphenamines on the market are pharmaceutic specialties. The labels of these drugs must mention: (1) their chemical composition (the nature of the side chain); (2) the percentage of arsenic, and (3) the nature and the proportion of foreign matter. The supervisory control of these products must consist in the verification of the statements found on the label. It will include: 1. The amount of arsenic; the titer of arsenic must be between 19 and 21 per cent. 2. The amount of nitrogen. The ratio of arsenic to nitrogen must not be less than 5:1 nor more than 5.6:1. 3. The amount of sulphur, total and combined. 4. Determination of the side chain. 5. Determination of the D. M. index (arsenoxide). The D. M. index number must not exceed 12. The products that prove satisfactory chemically are subjected also to an animal test to determine their toxicity.

Poisonous Milk

In connection with intoxication developing from the injection of milk, M. Daels has presented to the Royal Academy of Medicine of Belgium a communication on the toxicity of certain milks and cheeses. Examination dispelled the idea of intoxication due to micro-organisms. The analysis resulted in the discovery of a decomposition product presenting characteristics common to the alkaloids and to the ptomains. The substance isolated has nothing in common with the thyrotoxicon of Vaughan, the alkaloid of Dokkun or the fetterine of Awerkijew, all substances derived from milks and cheeses that have undergone changes, which may produce immediate symptoms of poisoning.

The most plausible hypothesis assumes a substance resulting from the protein substance under the action of pathogenic or ordinary putrefaction microbes, possibly still unknown and operating under conditions as yet undetermined. Its general characteristics bring it into close relation with hydrocollidine and collidine. It is doubtless a related substance, being isomeric or polymeric.

ITALY

(From Our Regular Correspondent)

Nov. 16, 1925.

The Annual Session of the Italian Society of Internal Medicine

The Società italiana di medicina interna held its annual session, October 28-30, some of the meetings of which were attended also by members of the Società italiana di chirurgia. Senator Maragliano, the president of the society, was in the chair, assisted by the two vice presidents, Senator Queirolo, clinical physician of Pisa, and Professor Giuffré, clinical physician of Palermo; Senator Fedele, minister of public instruction, and General Capo Della Valle, M.D.

THE OPENING CEREMONIES

In the opening address, Professor Maragliano emphasized that Italy has not sufficiently realized the part that medicine may play in the intellectual and political development of a country. Italy has heretofore relied almost entirely on belles-lettres and art as the bases for the estimate placed on it abroad, not valuing sufficiently the authority that may come to a country through the exportation, as it were, of its scientific thought, including particularly medicine. The speaker paid his respects to the memory of Guido Baccelli of Rome (1832-1916), the pioneer of clinical medicine in Italy, and suggested that his scientific productions be collected in a single volume.

Professor Maragliano recalled that the labors of De Giovanni (so adversely and unjustly criticized) on the relations between the morphology of the human body, on the one hand, and of pathology and clinical manifestations, on the other hand, have again come into honored recognition. His work and that of his pupils is now being faithfully studied, under the guidance of the Bologna clinic. The speaker concluded his address by referring to the dictum of Pasteur that science should represent the highest expression of national life, and that the people which shall hold the highest place in scientific thought and in the intellectual life in general will always rank above other nations.

THE TOPICS DISCUSSED AT THE CONVENTION

The first speaker on the scientific program was Professor Boeri of Naples, who discussed the functional examination of the respiratory apparatus. He emphasized the need of supplementing the mechanical examination of the respiratory apparatus by a study of the respiratory quotient, or, better still, of the basal metabolism, the findings of which furnish precise data on the final purpose of respiration; namely, cellular metabolism. The speaker stated that the respiratory apparatus lends itself to reeducation better than any other. It is necessary to instruct not only the sick, but also the well, how to breathe. We must even discipline a cough, which is sometimes useless or insufficient, and sometimes injurious. In this manner the human organism may defend itself against respiratory disease, and particularly against tuberculosis.

Professor Baglioni of Rome pointed out the necessity of bringing human physiology in closer relation with the clinic, particularly with regard to problems that interest both the clinician and the pathologist; for example, the problems of natural defense, reparatory and restitutional processes, and of the adaptation and compensation of various organs; problems concerning the modes of reaction of the body as a whole, and problems affecting individual variability.

Dr. Liberopulo referred to a patient with pulmonary tuberculosis associated with syphilis, who improved notably as a result of antisyphilitic treatment.

A communication by Professor De Nunno of Naples showed how, by a device of his own invention, he measures the temperature of the air breathed and hence of the lungs, thus securing data that are useful in the diagnosis and prognosis of respiratory and circulatory affections.

Professors D'Amato and Sabatini discussed the pathologic anatomy, pathogenesis and clinical manifestations of cirrhosis of the liver.

On the subject of exophthalmic goiter, the first speaker was Professor Ferrata of Pavia, who dealt with the medical side of the question. He reviewed the various explanations of the origin of the disease, and considered the forms of medical treatment that have been tried, dividing them into hygienodietetic, symptomatic and supposedly pathogenic. Measures that should be undertaken will vary. In the first stages of the disease, medical treatment may prove effective; but surgical intervention, if instituted in season, may still be best relied on to effect a radical cure of exophthalmic goiter. Professor Fiori of Modena presented the surgical aspects of exophthalmic goiter, and advanced the opinion that, while cases of moderate severity remain within the domain of the internist, all others must be given over to the surgeon.

Professor Milani of Rome discussed radium therapy in exophthalmic goiter, which, he said, is little known but concerning which there exist many groundless preconceived opinions. Of 1,080 cases in which radium treatment was given, as reported in the more recent literature, from 38 to 50 per cent of cures were effected in the genuine types; under the influence of radium therapy almost all the symptoms are improved; the struma and the exophthalmos, however, usually prove rebellious.

After discussion of the papers, the assembly adjourned. Padua was chosen as the next place of meeting.

Measures to Combat Noise on City Streets

With reference to excessive noise on city streets, the Ordine dei medici of the province of Rome has approved the following resolution introduced by Professor Zevi:

> The council of the Ordine dei medici of the province of Rome, concerned over the evident damage inflicted on the nervous system of citizens by the noise caused by motor trucks, and still more by the tooting and other shrill noises of passenger automobiles, and, in general, by the various mechanical contrivances which, set in action with the intention of advising passers-by of the danger of a collision, become the indirect cause of injuries, owing to the stunning effect of the noise itself, especially on persons with impaired nervous system, expresses the ardent desire that the national government and the local administrations, taking account of the hygienic and social injury that is being done, shall establish, as soon as possible, technical and administrative regulations such as will remedy the grave state of affairs, which is daily growing worse owing to the increase of traffic.

A Graduate School for Specialists in Clinical Pediatrics

The University of Bologna has established a school for specialists in clinical pediatrics, in which all graduates in medicine and surgery may enroll. The course will extend over two years, at the end of which candidates, on passing an examination and presenting an original thesis, will receive a special diploma, which will have legal recognition. Among others, these topics will be covered: clinical surgical pediatrics, Professor Francioni; clinical surgical pediatrics, Professor Nigrisoli; clinical orthopedics, Professor Putti; general therapy and puericulture, Professors Viola, Novi and Francioni; clinical otorhinolaryngology, Professor Calicetti; odontology, Professor Beretta. The courses begin with the opening of the school year 1925-1926.

The Laboratory School of Medicine in Venice

November 5, the opening address of the new academic year of the Scuola pratica di medicina e chirurgia in the Ospedale Civile at Venice was delivered by Professor Ligorio, director of the hospital. He showed that, during the previous year, 218 lectures had been delivered at the school, which were attended by 2,300 persons. Professor Guicciardi gave his introductory lecture on "Social Obstetrics." He praised his predecessor, Paolo Negri, who left many valuable studies and researches on obstetrics and gynecology. He then reviewed the advances made in these specialties during the last twenty years. He recalled that the mortality from puerperal infection had been reduced to almost zero in centers where medical science and knowledge of hygiene had enlightened the population. The speaker referred to the lamentable fact that criminal abortion was five times more frequent than it was before the war. He regretted that the laws against infanticide were, in general, too lax.

Honor Roll of Students Who Fell in the Great War

The Grande Albo d'Oro, or gold album, containing the names of all the Italian students who fell in the Great War, has been completed. The work was begun and brought to completion through the efforts of *Il Goliardo,* a periodical published in Naples. The list of 10,000 students who belonged to the universities, lycées, technical schools, normal schools and grammar schools was obtained from the schools in response to a circular letter sent out by the minister of public instruction, so that it is believed the honor roll will be accurate.

RIO DE JANEIRO

(From Our Regular Correspondent)

Nov. 15, 1925.

Carbon Tetrachlorid in Hookworm Disease

Dr. H. Maciel, a physician in the Brazilian navy, has just published a report on the treatment of 1,508 cases of hookworm disease with carbon tetrachlorid in the Naval Hospital. This drug has proved to be the most efficient of ancylostomicides now in use, and also the least toxic, when pure. A single dose of 2.5 c.c. has usually been sufficient for the clinical cure of infested adults. There is no danger in repeating the drug at intervals. As an ascaricide, carbon tetrachlorid is valuable, but less efficient than chenopodium oil, its action being slower and one single dose being seldom sufficient for a cure. In cases of mixed worm infection, it is therefore wise to combine both drugs. Against *Trichuris trichiuria,* carbon tetrachlorid has proved almost completely inefficient. One advantage of this drug in hookworm disease is that no laxative is required afterward, except in cases of chronic constipation. In these, it may be better to give magnesium sulphate. Great care must be shown in choosing an absolutely pure product, as other associated substances are extraordinarily poisonous. Gelatin capsules offer a good method of administration, but they must be prepared just before administration, in order to avoid evaporation.

Hematomyelia in Caisson Disease

For the first time in Brazil, a case of caisson disease was reported to the National Academy of Medicine by Dr. Guedes de Mello, who spoke on behalf of Dr. Castello Branco, a physician in the navy. One of the workers in the breakwater at Cobras Island, after working under heavy pressure, 23 meters under the sea, rushed through the decompression process. The result was a hemorrhage in the lower spinal cord and a paralysis of the lower extremities. This paralysis was sudden and at first complete. It showed, however, a tendency to improve after a while, and the patient can now move about. A condition of persistent paresis still remains. The tendon reflexes, at first exaggerated, are now abolished. Babinski's sign shows attenuation. The lower members contract under plantar stimulation, thus proving the existence of automatism and defense reflexes. All sensations of heat and pain disappeared during the first days of the disease, but this analgesia has now changed into hyperalgesia, although the heat sensation is still defective. The tentative diagnosis was a hemorrhage in the cord. Transitory embolisms usually cause plegic symptoms, as described by Dejerine under the name of spinal intermittent claudication.

New Members of the Academy of Medicine

Drs. J. de Barros Barreto, a sanitarian, David Sanson, an otorhinolaryngologist, and Oswino Penna, a pathologist, have taken possession of the places to which they were appointed in the National Academy of Medicine. Dr. Andrade Reis has been elected a corresponding member from São João d'el Rei, Minas.

New Privatdozents

After the proper competitive tests, Drs. L. Ribeiro Filho and J. de Barros Barreto have been appointed privatdozents of legal medicine and hygiene, respectively, in the Rio Medical School.

BERLIN

(From Our Regular Correspondent)

Nov. 14, 1925.

Extension of the Functions of the Federal Health Service

Heretofore the Reichsgesundheitsamt, or federal health service, has confined its decisions and opinions to cases affecting the reich or federal officials; but it is now permitted to render decisions for a fee, in cases referred by communes or other official bodies, or by private industries or persons. However, at present the Reichsgesundheitsamt has only a limited number of scientifically trained persons among its personnel, and extensive laboratory facilities are lacking. The federal health service must, therefore, reserve the privilege of refusing to render decisions in certain cases. It is prepared to give opinions, render decisions or to make investigations in questions pertaining to bad hygienic conditions of all kinds. It will give advice in problems of industrial hygiene, and opinions with reference to methods of using certain raw materials and the preparation or manufacture of food products. Decisions or expert opinions will not be rendered as to substances and procedures for the preservation of foodstuffs and consumption products, research methods for the recognition of diseases of man and animals, disinfectants, vermin exterminators, prophylactics or medicaments. The federal health service will refuse to render expert opinions in civil and criminal suits pending in the courts, as it is not feasible to send members of the staff to serve as experts in court trials. The fees charged by the federal health service for expert opinions rendered will vary with the nature of the case, and may be determined and agreed on by the parties concerned.

Financial Aid for Berlin Physicians

It has become generally known how great has been the distress among medical men in Germany, during recent years. The medical profession is profoundly grateful to those American physicians who labored to relieve this distress. Professor Einhorn of New York, and Professors Hektoen and Petersen of Chicago, were leaders of the movement to raise funds in the United States. During 1923, which marked the climax of the period of inflated currency, the funds for physicians were supplied almost exclusively through the endeavors of the aforementioned physicians. It thus became possible to supply needy physicians and their dependents with a measure of assistance. The Aushilfsfonds der Notgemeinschaft deutscher Aerzte, which was established by Professor Schwalbe, served as mediator between the American committees and the German aid societies.

The deplorable conditions of recent years have been much improved. With the stabilization of German money the incomes of German physicians have increased, and they are now gradually becoming able to keep above water the heads of their dependent colleagues. The sufferers today consist, for the most part, of physicians who are getting too old to practice. The representative medical societies are supplying a reasonable quantity of food for these elderly physicians. Recently, the *Aerztekammer* (chamber of physicians) of Berlin has been more active in this direction. In Berlin aid is most needed. A few weeks ago, at a meeting of the *Aerztekammer,* the treasurer advocated the creation of an aid fund for elderly physicians and their dependents. He pointed out that, of the 4,000 or more physicians of Greater Berlin, approximately 2,381 have an income not exceeding 3,000 marks ($714). Of these, 312 are more than 65 years old. Thirty-six physicians pay no income tax; the taxable income of twenty-six is under 1,000 marks; of forty-three, under 2,000 marks, and of twenty-five, under 3,000 marks. As it may be assumed that an income of less than 3,000 marks is not sufficient to supply ordinary needs, more than one third of Berlin physicians over 65 years of age are in want. Among this number are men who, before the war, could be counted among the well-to-do. In the opinion of the executive committee of the *Aerztekammer*, a special organization should be created to look after needy physicians, as the ordinary aid fund of a Prussian *Aerztekammer* is not adequate to the task. To be entitled to aid, physicians must have three years' residence in Berlin, must be eligible to membership in the *Aerztekammer,* and must not be recipients of a pension. Recipients of aid shall receive such a sum as shall be necessary to raise their income to 3,000 marks ($714) annually. The funds for the project it is proposed to obtain by a 10 per cent. increase in the annual dues of the members of *Aerztekammern.* Certain physicians shall be exempted from the payment of such dues: (1) those who are recipients of a pension; (2) those whose annual income is under 3,000 marks, and (3) those who are exempt from the regular dues of the *Aerztekammer.* The *Aerztekammer* adopted these proposals by a large majority. Before they can become effective, however, they must be approved by the supervisory board.

Health Measures in Aid of Federal Health Insurance

The Reichstag has passed the following legislation:

> The federal government may, after hearing the arguments of the insured and the panel physicians, or of their representative leagues, by and with the consent of the federal council and a committee of the Reichstag, composed of twenty-eight members, adopt regulations concerning the medical treatment under federal health insurance and pertaining to the general measures bearing on the insured for the prevention of premature industrial incapacity or invalidity or for the betterment of health conditions among the insured population. Such regulations shall, furthermore, serve to determine the relations of the holders of federal health insurance among themselves and with the recipients of public and private welfare treatment in the fields of therapeutics and of social hygiene.

Marriages

Kenneth Dawson Graves, Pearisburg, Va., to Miss Margaret Stringfellow Burwell of Roanoke, Nov. 4, 1925.

Charles Ralph Ozias, Kansas City, Mo., to Miss Mary Ester McCarthy of Chicago, Nov. 25, 1925.

Randolph Moore Gilliam to Miss Frances Geraldine McLaine, both of Baltimore, Sept. 8, 1925.

Roland Spuhler Cron to Miss Florence Marie Schroeder, both of Milwaukee, Nov. 19, 1925.

Frank E. Daves to Miss Adelaide Simpson Bradley, both of Danville, Va., Oct. 12, 1925.

Deaths

Henry Crain Tinkham ⊕ Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1883; dean and professor of clinical surgery and applied anatomy at his alma mater; on the staffs of the Mary Fletcher Hospital, Burlington, and the Fanny Allen Hospital, Winooski; aged 69; died, Dec. 6, 1925.

William H. Purdy ⊕ Mount Vernon, N. Y.; Bellevue Hospital Medical College, New York, 1898; past president and secretary of the Westchester County Medical Society; health officer of Mount Vernon; aged 50; died, Dec. 16, 1925, of lobar pneumonia.

William Samuel Cock, Whiteville, Tenn.; Memphis Hospital Medical College, 1893; member of the Tennessee State Medical Association; formerly on the staff of the Western Hospital for the Insane, Bolivar; aged 61; died, Dec. 6, 1925.

William Turner Patterson, West Plains, Mo.; Rush Medical College, Chicago, 1884; aged 61; died, Sept. 13, 1925, at the Lincoln Hospital, Rochelle, Ill., of injuries received when the automobile in which he was driving was struck by a train.

Donald MacCulloch Gedge ⊕ San Francisco; Cooper Medical College, San Francisco, 1892; assistant medical director of the Metropolitan Life Insurance Company of New York; aged 64; died, Dec. 5, 1925, of acute dilatation of the heart.

Nels Christian Nelson ⊕ Eugene, Ore.; Northwestern University Medical School, Chicago, 1906; president of the Lane County Medical Society; member of the Pacific Coast Oto-Ophthalmological Society; aged 50; died, Nov. 1, 1925.

John Addison Patterson, Washington, Pa.; Medical College of Ohio, Cincinnati, 1875; member of the Medical Society of the State of Pennsylvania; formerly on the staff of the Washington Hospital; aged 82; died, Dec. 7, 1925.

Wallace Howd McLarty, Columbus, Miss.; University of Pennsylvania School of Medicine, Philadelphia, 1923; member of the Medical Society of the State of Pennsylvania; aged 27; was found dead in bed, Nov. 28, 1925.

John William Holmes, Pulaski, Va.; University of Maryland School of Medicine, Baltimore, 1882; member of the Medical Society of Virginia; justice of the peace; aged 77; died, Dec. 5, 1925, at Kenova, W. Va.

Daniel Martin Brickey, Manbar, W. Va.; University of Louisville (Ky.) School of Medicine, 1911; member of the West Virginia State Medical Association; aged 44; died, Nov. 18, 1925, of cerebral hemorrhage.

Carlus E. Wilkinson, Bruceton Mills, W. Va.; Kentucky University Medical Department, Louisville, 1904; member of the West Virginia State Medical Association; aged 48; died, Nov. 23, 1925.

Michael J. Dwyer ⊕ St. Louis; Beaumont Hospital Medical College, St. Louis, 1899; formerly superintendent of the Robert Koch Hospital; aged 65; died, Dec. 8, 1925, of bronchial asthma.

William Edward Staggs, Merriam, Kan.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, Mo., 1902; aged 51; died suddenly, Dec. 9, 1925.

Richard Dana Bell ⊕ Boston; Medical School of Harvard University, Boston, 1913; assistant professor of biological chemistry at his alma mater; aged 38; died, Dec. 6, 1925, of heart disease.

John M. Lavin, Sarasota, Fla.; Rush Medical College, Chicago, 1901; formerly on the staff of St. Joseph's Hospital, Chicago; served during the World War; aged 56; died, Dec. 7, 1925.

Joshua H. Austin, Morgantown, Ky.; Kentucky School of Medicine, Louisville, 1898; member of the Kentucky State Medical Association; aged 54; died, Dec. 11, 1925, of heart disease.

Samuel Edward Moore, Brooklyn; University of Buffalo (N. Y.) Department of Medicine, 1895; on the staff of the Ridgewood Sanitarium; aged 55; died, Dec. 8, 1925, of heart disease.

Joseph MacDonald, New York; Medico-Chirurgical College of Philadelphia, 1903; member of the Medical Society of the State of New York; aged 48; was found dead, Dec. 5, 1925.

Charles Fry, Tipton, Mo.; Barnes Medical College, St. Louis, 1893; member of the Missouri State Medical Association; aged 58; died, Dec. 2, 1925, following a long illness.

George M. Romig, Allentown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1868; aged 80; died, Dec. 6, 1925, of injuries received in a fall from a window.

John C. Fretz, Waterloo, Ind.; University of Michigan Medical School, Ann Arbor, 1886; member of the Indiana State Medical Association; aged 69; died, Oct. 26, 1925.

George Ford Meeser, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1870; aged 77; died suddenly, Dec. 9, 1925, at Avalon, N. J.

Phillip J. Loranger ⊕ Detroit; Detroit College of Medicine and Surgery, 1897; member of the board of health; aged 54; died, Dec. 8, 1925, following a long illness.

Gordon T. Alley, Charlottetown, Prince Edward Islands, Canada; McGill University Faculty of Medicine, Montreal, Que., 1899; died suddenly, Oct. 31, 1925.

James M. Peerson, Florence, Ala.; Vanderbilt University Medical Department, Nashville, 1891; aged 62; died suddenly, Dec. 4, 1925, of cerebral hemorrhage.

Thomas Henry Crawford, Calgary, Alta., Canada; Trinity Medical College, Toronto, Ont., 1900; aged 54; died, Oct. 24, 1925, at the Holy Cross Hospital.

John Peach, Mitchellville, Md.; University of Maryland School of Medicine, Baltimore, 1857; aged 90; died, Dec. 6, 1925, following a long illness.

Clifford T. W. Sappington ⊕ Oxford, Md.; University of Maryland School of Medicine, Baltimore, 1903; aged 45; died suddenly, Nov. 29, 1925.

Joseph George Tomkins, San Francisco; California Eclectic Medical College, Los Angeles, 1891; aged 90; died, Dec. 5, 1925, of lobar pneumonia.

Bertram Harvey Wagnon ⊕ Atlanta, Ga.; Atlanta School of Medicine, 1911; on the staff of the Noble Infirmary; aged 41; died, Dec. 7, 1925.

Charles B. Lee ⊕ Glen Jean, W. Va.; Louisville (Ky.) Medical College, 1891; aged 58; died, Dec. 3, 1925, at Philadelphia, of heart disease.

Oliver Fisher, Sioux City, Iowa; State University of Iowa College of Medicine, Iowa City, 1883; aged 68; died, Dec. 3, 1925, of heart disease.

Marcellus Whitney, Gainesville, Ky.; Vanderbilt University School of Medicine, Nashville, 1880; aged 71; died, Dec. 3, 1925, of pneumonia.

John Ball, San Francisco; California Eclectic Medical College, Los Angeles, 1894; aged 78; died, Dec. 8, 1925, of chronic myocarditis.

Alfred Yost Gerhard, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1876; aged 74; died, Dec. 6, 1925.

Charles Orrin Baker, Fort Madison, Iowa; University of Michigan School of Medicine, Ann Arbor, 1878; aged 76; died, Dec. 3, 1925.

Gerson Feigenbaum, San Antonio, Texas; Baltimore University School of Medicine, 1900; aged 58; died, Dec. 3, 1925, of heart disease.

George W. Holdren ⊕ Kingston, Ohio; Medical College of Ohio, Cincinnati, 1889; aged 63; died, Dec. 8, 1925, following a long illness.

Horace Gilbert Bidwell, Jersey City, N. J.; Bellevue Hospital Medical College, New York, 1872; died, Dec. 6, 1925, at Tampa, Fla.

Edmund George McSweeney, Brockton, Mass.; L.R.C.P., L.R.C.S., Edinburgh, L.F.P.S., Glasgow, 1891; aged 62; died, Dec. 10, 1925.

R. Charles Hart, Indianapolis; University Medical College of Kansas City, Mo., 1903; aged 45; died, Dec. 1, 1925, of heart disease.

Hamilton H. Wilcox, Hot Springs, S. D.; Medical College of Ohio, Cincinnati, 1882; aged 75; died, Dec. 10, 1925, of heart disease.

Clarence Alphonso Lindsay, Xenia, Ohio; Ohio State University College of Medicine, Columbus, 1916; aged 34; died, Dec. 10, 1925.

Dirk R. Meengs, Grand Rapids, Mich.; Rush Medical College, Chicago, 1885; aged 75; died, Dec. 4, 1925, of heart disease.

James Thomas Blackburn, West Point, Ky.; Kentucky School of Medicine, Louisville, 1887; aged 60; died, Dec. 8, 1925.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

THE HOXIDE CANCER "CURE"

A Chamber of Commerce Sponsors the Nostrum of a Horse-Doctor

There is being exploited from the town of Taylorville in central Illinois a "cancer cure" put out by one Harry M. Hoxsey and sponsored by the Chamber of Commerce of Taylorville. The treatment, a secret one of course, is administered by a concern calling itself the Hoxide Institute. The "Institute" operates what it is pleased to call a sanitarium from a building that until recently belonged to the local Order of Moose, but has been purchased from that organization so that the exploiters of this cure might have some place in which to receive their victims.

The history of Hoxide is typical of cancer quackery. It originated with the father of Harry M. Hoxsey, one John C. Hoxsey, a quack now dead, who used to dub himself "doctor." Hoxsey senior seems to have dabbled in veterinary medicine, faith healing and cancer curing. Ten or fifteen years ago John C. Hoxsey, with two others, was indicted by the Montgomery County (Ill.) grand jury on the charge of attempting to blackmail a dentist of Litchfield. Following the indictment Hoxsey disappeared, although the two coconspirators were convicted and punished. Hoxsey evaded arrest for some months when he was jailed until he furnished the $5,000 bail required. He, apparently, escaped punishment. John C. Hoxsey died in 1919; cause of death—Cancer!

THE NATIONAL CANCER RESEARCH INSTITUTE

Following the death of Hoxsey senior, nothing further was heard of the alleged cancer cure until 1924 when Henry M. Hoxsey formed with one Dr. Bruce Miller and an insurance man, Lucius O. V. Everhard, a common law trust having the somewhat imposing name "National Cancer Research Institute and Clinic."

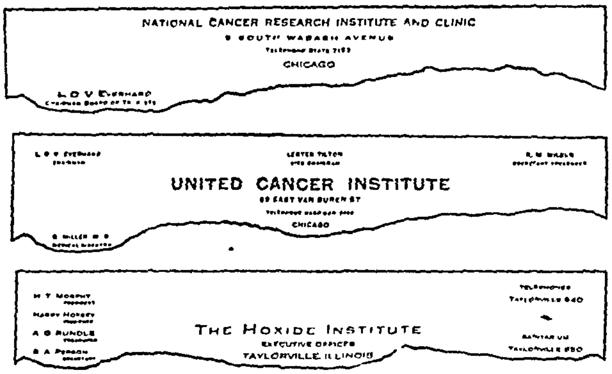
Everhard, who, apparently, was the brains of the promotion end of the business, has been connected at various times with alleged insurance companies. In 1910 and 1911 his name appeared in the Chicago directories as a "broker." In 1914 he was styled "insurance superintendent." In 1915 he was "President of the Superior Life Insurance Company." From information obtained from the Division of Insurance of the State of Illinois, the Superior Life Insurance Company never seems to have passed the promotion stage. A Rockford, Illinois, physician writes that the company was merely a stock-selling scheme with doctors and dentists as the principal victims. At that time the State of Illinois had practically no supervision over insurance companies in process of organization. Later L. O. V. Everhard was "President of the Drexel Mutual Life Insurance Company." The company's offices seemed to have been under Everhard's hat. As this Drexel outfit has failed to comply with the state laws the Superintendent of Insurance of Illinois has referred the matter to the Attorney General of the state with a request that he proceed for a receivership.

Bruce Miller, M.D., the physician connected with the National Cancer Research Institute and Clinic, seems to have received a diploma from the College of Physicians and Surgeons, Chicago, nearly forty years ago. If he has ever practiced medicine until he took up the cancer cure business, we are unable to find record of it. Information has come to us that he has been in the stepladder business.

As already stated, the National Cancer Research Institute and Clinic was recorded in May, 1924, as a common law trust in Chicago. It was originated by Harry M. Hoxsey who appointed three trustees, Bruce Miller, L. O. V. Everhard and himself. These trustees were vested with broad powers in connection with the management of the trust, including the disposition of the profits in any way they might elect.

The declaration of trust states that Harry Hoxsey is the "owner and possessor of a secret formula for the compounding of a treatment for cancer," and that this treatment is "something entirely new in medicine." By the terms of the declaration, Hoxsey divested himself of all right to use the formula except as a trustee with the other trustees of the trust estate. He also agreed that he would not use the formula nor permit any one else to use it or reveal the secret of the formula to any person.

By the terms of the same trust it was declared that "beneficial interests" might be issued not to exceed 5,000, of which 3,000 were to be issued to Hoxsey. The three trustees were given power to fix the price at which these beneficial interests should be sold and to increase that amount as they saw fit. But no beneficial interests were to be issued for less than $100. However, a provision was inserted at this point to the effect that the trustees might donate beneficial interests "to persons whose influence may be of value to the trustees in establishing hospitals or otherwise increasing the value of the trust estate." The owners of certificates of beneficial interests were not entitled to any title in the property or to the right to call for a division of the property or for even an accounting! Furthermore, the three trustees by the terms of the trust were to fix the compensation of any or all officers and were "to pay to themselves out of the trust estate such a compensation for their own services as trustees as they deem reasonable, and their judgment in this respect shall not be questioned."



NATIONAL CANCER RESEARCH INSTITUTE AND CLINIC
SOUTH WABASH AVENUE
CHICAGO

L. O. V. EVERHARD

L. O. V. EVERHARD
LESTER TILTON
UNITED CANCER INSTITUTE
EAST VAN BUREN ST
CHICAGO

B. MILLER M.D.

H. T. MURPHY
HARRY HOXSEY
A. G. RUNDLE
THE HOXIDE INSTITUTE
EXECUTIVE OFFICES
TAYLORVILLE ILLINOIS
TELEPHONES
TAYLORVILLE 640
SANITARIUM
TAYLORVILLE 650

The history—so far—of the resurrected cancer cure of Quack J. C. Hoxsey, told in letter-heads.

Hoxsey, Miller and Everhard began operations in Chicago, and reports came in that they were claiming that their "cure" was being used in highgrade Chicago hospitals and by physicians of unquestioned professional standing. Investigation proved that these claims were false. With such persistency, however, were these falsehoods circulated that it became necessary for the physicians whose names were being thus misused to issue a disclaimer, and the following "Warning" was published in the *Illinois Medical Journal*, October, 1924:

> "It has come to our attention that a promoter by the name of Everhard, under the name of the 'National Cancer Research Institute and Clinic' has been using our names in connection with the promotion of an alleged cancer cure. We wish to warn all persons that no confidence should be placed in the promoter, the institute or the alleged cure under any representation in which our names are used, as they have been used entirely without our knowledge or consent."

THE UNITED CANCER INSTITUTE

As the medical profession began to learn about the National Cancer Research Institute and Clinic, the business of that organization waned. Early in 1925 it was reported that Everhard and Miller had decided to eliminate Hoxsey and use instead the "cure" of an Iowa quack, one Lester Tilton of Clinton. The name of the new piece of fakery was "United Cancer Institute," with Everhard for chairman, Miller for medical director, one Romeo M. Wilbur for secretary-treasurer and Quack Tilton for vice-chairman.

Tilton has long exploited his "cancer and blood poison treatment" in a method typical of the cancer cure quack.

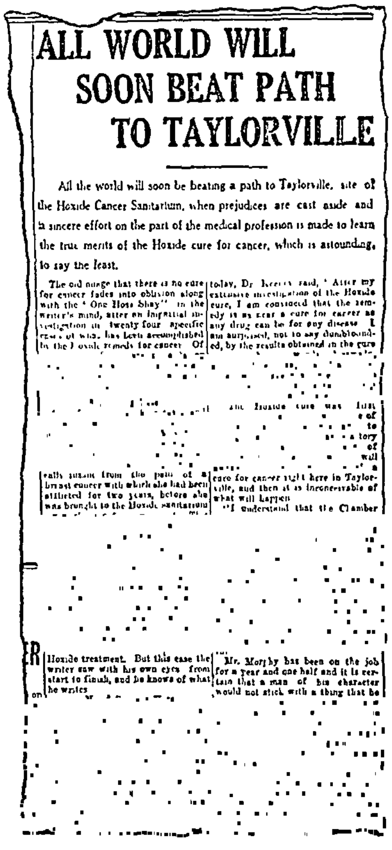
The United Cancer Institute had but a short life, and at the present time, January, 1926, we are unable to learn just what scheme is occupying the attention of Wilbur, Everhard or Bruce Miller.

"SELLING" TAYLORVILLE

When the cure "blew up" in Chicago Hoxsey went back to his old stamping ground in central Illinois, and the next that was heard was that Hoxsey and a high-pressure promoter, one H. T. Morphy, were down in Taylorville, Illinois, trying to get that town interested in the establishment of a cancer cure sanitarium. The local newsapers boosted the scheme—and later got full-page advertisements of the "sanitarium." During the preliminary stages Promoter Morphy, whose business it was to "sell" the Hoxsey cancer cure idea to Taylorville, was described in the local newspapers as "H. T. Morphy of London and Chicago," "Chairman of the Board of Trustees for the National Cancer Research Institute." A careful search of the Chicago directories for more than twenty years past fails to show any one by the name of H. T. Morphy. Twenty-two years ago the directory did contain the name of one "Hubert T. Morphy, theatrical agent."

The main line of argument used by Morphy and those interested in foisting quack J. C. Hoxsey's resurrected nostrum on Taylorville has been that if a sanitarium were founded in that town it would not be long, as the local paper stated in black-face type half an inch high, before "All World Will Soon Beat Path to Taylorville." Or, as Morphy was quoted as saying: "They'll come from far and near and each of them will spend money here."

The local medical profession in Taylorville, as is usual in such cases, did its best to discourage the establishment of this quack institution, and, as also is usual, was bedamned for its pains. At the time that Morphy was holding his mass meetings in order to put his scheme "across," he complained that he was "experiencing considerable trouble" due to "a strong undercurrent of opposition to the movement."



ALL WORLD WILL SOON BEAT PATH TO TAYLORVILLE

All the world will soon be beating a path to Taylorville, site of the Hoxide Cancer Sanitarium, when prejudices are cast aside and a sincere effort on the part of the medical profession is made to learn the true merits of the Hoxide cure for cancer, which is astounding, to say the least.

today, Dr. Keeney said, "After my extensive investigation of the Hoxide cure, I am convinced that the remedy is as near a cure for cancer as any drug can be for any disease. I am surprised, not to say dumbfounded, by the results obtained in the cure

ually insane from the pain of a breast cancer with which she had been afflicted for two years, before she was brought to the Hoxide sanitarium

cure for cancer right here in Taylorville, and then it is inconceivable of what will happen

"I understand that the Chamber

Hoxide treatment. But this case the writer saw with his own eyes from start to finish, and he knows of what he writes.

"Mr. Morphy has been on the job for a year and one half and it is certain that a man of his character would not stick with a thing that he

How the local newspapers react to Hoxsey's cancer cure. "Hoxide is going over and going over big, and at the same time is going to take Taylorville with it." Five years from now the people of this Illinois town will be looking back at the cancer cure as they are at present looking back at a perpetual motion machine promotion that was "going big" in Taylorville a few years ago.

There is a large house in Taylorville, which, according to the local papers, was built some fourteen years ago and sold four years later to the local Moose Order for $13,500. The building appears to have become a white elephant on the hands of the Moose and, from the newspaper reports, they were anxious to get rid of it. They got rid of it—to Morphy, Hoxsey, et al.—for $15,000.

THE TAYLORVILLE CHAMBER OF COMMERCE

Edward H. Bach, a "Past Dictator" of the local Moose lodge, who seems to be in the shoe business in Taylorville, calls himself "Secretary of the Taylorville Chamber of Commerce." We are advised that, in fact, the Taylorville Chamber of Commerce was a defunct organization apparently resurrected for the purpose of exploiting the Hoxide cancer cure. Bach is credited with having secured authority from the national Moose organization to sell the Taylorville Moose Home and the local newspaper claims that it was due to his efforts "that the deal has been closed." Mr. Bach is now busily engaged in trying to place advertisements in newspapers over the country, urging those who are suffering from cancer to apply to the Chamber of Commerce of Taylorville for authoritative information as to the "cures that have been effected." These "cures," according to the same advertisement "are now being effected at Taylorville under strictly ethical medical supervision, painlessly, without operation, and with permanent results."

It must be borne in mind that these advertisements are submitted, not by—or at least not in the name of—the Hoxide Institute, but in the name of what appears to be a reputable civic organization, the Chamber of Commerce of Taylorville, Illinois, whose stationary bears the names of its officers, including the Mayor and various bank presidents. It is unthinkable that these representative citizens of a respectable community can realize the character of the business to which they are lending their names and influence.

H. T. Morphy has a brother in San Francisco, one E. A. Morphy. As long ago as last April, Morphy told the world—through the local papers—that he would go out to the coast and secure funds for further exploitation of the Hoxide cancer cure, and when out there "would send Dr. Keeney, famous specialist of the Western coast" to Taylorville to study the Hoxide cure. Dr. Keeney, whose full name is Homer I Keeney, late of Portland, Oregon, and San Francisco, California, has come, seen and been conquered. The name of Keeney seems to be one to conjure with, and the Hoxide outfit are printing in local papers what purport to be telegrams from people of the Pacific coast lauding the doctor. Taylorville is also advised:

> "Dr. Homer I. Keeney of San Francisco, noted surgeon and authority on cancer disease is in Taylorville and has just completed a thorough investigation of the claims made by the Institute."

The paper states further that Dr. Keeney is in no way connected with the Hoxide Sanitarium and "came here of his own accord"—which seems to indicate that the editor has forgotten what he published last April.

Nor is this the only way in which Keeney's name is being used as an asset to those who know nothing about him. The decent newspapers to which the Taylorville Chamber of Commerce submits advertisements naturally refuse them because every publisher who has intelligence enough to run a paper knows that advertised cancer cures are always and invariably cruel fakes. When the advertisements are refused, Mr. Bach comes back with a two-page letter in which he accuses the local physicians of Taylorville of acting in an unprofessional way, and states that Dr. H. I. Keeney, who "has been making an investigation of cancer throughout the United States" had visited Taylorville and has asserted that "in Hoxide we have a specific for cancer." With this letter of Bach's is what purports to be a copy of a telegram coming from E. A. Morphy of San Francisco and typed on Western Union telegram forms. In his telegram E. A. Morphy states that Homer I. Keeney "is better posted on cancer than most men on this coast" and closes his telegram with the statement: "I know Hoxide is specific for cancer."

In a Taylorville paper for December 19 there appeared a news item headed "DR. KEENEY WINS APPROVAL STATE MEDICAL BOARD. Methods of Hoxide Cancer Investigator Approved by California Medics." The item then states that a telegram received at Taylorville on that day declares that Homer I. Keeney went before the Secretary of the State Medical Board of California and "explained what he had found here, and received the approval of that official." Any one, of course, who is familiar with the Secretary of the State Medical Board of California knows that the statement that that official approved of the Hoxsey cancer cure is a falsehood made up out of whole cloth.

On December 10, 1925, the Hoxide Institute entered into an agreement giving H. T. Morphy power to negotiate contracts whereby the Hoxide treatment could be used in the British Isles. Morphy is to pay the Hoxide Institute 20 per cent of the net profits and the Hoxide Institute will furnish Morphy a sufficient quantity of the "treatment" necessary for the use of those British concerns that may go into this delectable line of business.

In the agreement, referred to above, it is declared that Morphy, Hoxsey and S. Arvid Person are the successors in trust to Hoxsey, Bruce Miller and L. O. V. Everhard and own and control all the rights of the National Cancer Research Institute and Clinic. S. Arvid Person is a chiropractor. His name appears in the files of the Bureau of Investigation as the "Grand Chapter Master" of a seriocomic outfit, Omicron Sigma Phi, which, apparently, was an imitation Greek letter fraternity to which all "students and graduates" of the evil smelling institution, the "National University of Sciences," were eligible for membership. The National University of Sciences will be remembered as the diploma-mill run by Charles C. Faiman, whose unsavory record, in part, was brought out, during the notorious Shepherd case. Faiman was treasurer of "Omicron Sigma Phi," while S. Arvid Person was "First Vice-President" of the National University of Sciences.

CANCER Any person suffering from this malady, or otherwise interested in its treatment, is invited to apply for authoritative information as to the cures that have been effected and are now being effected at Taylorville, under strictly ethical medical supervision, painlessly, without operation, and with permanent results. Address: The Secretary, Chamber of Commerce, Taylorville, Ill.

This is the advertisement that the papers of the country are asked to print. It is sent out in the name of the Taylorville Chamber of Commerce. Who pays for it we have not learned. Decent newspapers are, of course, turning it down.

There is a physician connected with the Hoxide Institute, one Albert T. Washburn. This, apparently, is for the purpose of protecting the "Institute" from prosecution under the state law. According to our records, Albert T. Washburn was born in 1871, received his premedical education at the Chicago public schools and was granted a diploma by the Chicago Homeopathic Medical College in 1891. He was licensed in the state of Illinois a year later. In 1893 he was practicing at Gilbertville, Indiana. He then seems to have moved to Chicago, but by 1902 was at Lexington, Illinois. In 1906 he was back again in Chicago, where he has been continuously until he took his present job. In June, 1925, Washburn entered into an agreement with the Hoxide Sanitarium to devote his entire time exclusively to this concern for a period of ten years. For this he was to get $300 a month for the first six months with an increase of $50 a month for each six months period thereafter. He was also to get "One Hundred Beneficial Interests in the National Cancer Research Institute and Clinic."

THE "CURE"

What is the Hoxide cure? Essentially the escharotic treatment with arsenic as the base. Specimens of the stuff used when the Hoxsey outfit was in Chicago were examined in the Association's laboratory and arsenic in large quantities was found. What happens, of course, can easily be imagined by physicians, but unfortunately the public has no such knowledge. In the case of some of the patients that were treated in Chicago by the National Cancer Research Institute and Clinic the arsenic applied to the malignant tissue ate into the blood vessels and the patients bled to death. One of the leading physicians of Taylorville wrote to The Journal more than a year ago in answer to a request for information, and stated that the first information he had concerning the Hoxsey cancer cure "was from an undertaker who showed enthusiasm about the matter." He stated further that Hoxsey senior had treated cases in that community for many years, always calling all cases cancer, but actually treating any verrucous condition that was submitted. The same physician reported a case that came to his attention of a patient who had been treated by the Hoxsey method for a tumor of the cheek. Two days before the man died our correspondent was called in and found necrosis not only of the soft tissues of the face but a complete destruction of the malar bone. The man died of hemorrhage. Another case that came to the attention of the same physician was one of carcinoma of the clitoris. As the doctor stated, "this stuff destroyed the bladder wall, the pubic bones and caused quite a mess." Of course it ended fatally.

In the Hoxide Institute the history of cancer cure quackery doubtless will repeat itself. Scores and probably hundreds of people with non-malignant or superficial growths will subject themselves to the caustic treatment. They will, of course, have these growths removed. It will be, however, at the expense of a greater outlay of money, time and pain than would have been the case had the operation been performed by their home physician under local anesthesia. One such case, in fact, figures in the testimonial booklet sent out by the Chamber of Commerce: A young man with a small fatty tumor in his arm, refusing to believe reputable local physicians, had it burned out by the Hoxide concern. He now testifies that he was cured of cancer! There will also be the usual proportion of individuals showing the ravages of tertiary syphilis. If the medical brains of the Institute are sufficient to recognize the condition, it will be a simple matter to ply these patients with iodids, at the same time making local applications of the arsenical powder or paste. These cases, too, will, in some instances, clear up.

On such cases we need waste little sympathy. In those, however, of sufferers from carcinoma who are beguiled by the false beacons displayed by the highly respectable citizens of Taylorville into coming to the Hoxide Institute for treatment, the story will be one of tragedy. In time, of course, the weight of experience will overcome the force in advertising and then the Hoxide Institute will close its doors. In the meantime the promoters of the scheme will have reaped a rich harvest from gullibility and suffering.

Correspondence

CHICAGO MEDICAL SOCIETY RESOLUTIONS ON PUBLIC HEALTH OFFICIALS

To the Editor:—The Journal, November 21, under news, contains a somewhat lengthy resolution adopted by the council of the Chicago Medical Society, November 10, which is so misleading that I should like an opportunity to correct it.

The resolution in question begins as follows:

> Whereas, the American Public Health Association at its annual meeting in St. Louis in October, 1925, listened to an address by one of its members favoring a new doctor in each community where a health officer is needed to be known as a Doctor of Public Health.

It closes as follows:

> *Resolved*, That the Chicago Medical Society views with displeasure any move on the part of the American Public Health Association which may express a desire to replace physicians as health officials by laymen with D.P.H. licenses.
>
> *Resolved*, That a copy of this resolution be sent to the American Public Health Association, to all those institutions of learning where courses in public health are given with a view to conferring a D.P.H. degree, and to every state medical society with a request that the component county societies be made acquainted with the proposed activities of a public health association whose president is a layman.

As president of the American Public Health Association, I should like to say that no such address was delivered at St. Louis, that no such desire to replace physicians as health officers by laymen has ever been expressed at any meeting of the association, and that there are no "proposed activities" whatever along this line in the American Public Health Association or, so far as I am aware, outside of it.

What all competent public health workers are interested in is the securing of health officers who have devoted sufficient time to the specific problems of public health administration to qualify them to fulfil their official duties, a task of the greatest difficulty.

The "D.P.H. license" mentioned in the resolution may possibly refer to the Diploma in Public Health, which is extensively given in England and Canada but which is not in existence in this country. It is, as far as I am aware, always given as a postgraduate course to men who have already completed their medical studies. The same thing is, in general, true with regard to the degree of Doctor of Public Health, which is the higher degree generally given in this country to those specializing in this field. There are two or three universities which open the courses for this degree to men who have completed the first two years of the medical course, but most of them require the full medical course as a prerequisite. The doctorate in public health, as it is given under my direction here at Yale, is, for example, a two years' course open only to those who already possess the degree of M.D. "The layman" now serving as president of the American Public Health Association is strongly of the opinion that the city and state health officer should wherever possible be a physician with additional training in public health.

C.-E. A. Winslow, New Haven, Conn.
President, American Public Health Association;
Professor of Public Health, Yale School
of Medicine.

INTESTINAL INFLUENZA AND B. SUIPESTIFER

To the Editor:—Apropos of the letter of Dr. C. J. Snitkay (The Journal, Dec. 19, 1925) in regard to intestinal influenza, in September, 1925, the London (England) School of Tropical Medicine examined the stools of certain persons suffering with the symptoms of so-called intestinal influenza, and isolated *Bacillus suipestifer*. These sick persons were former patients of mine. Several weeks before leaving America for England, en route for India, they had received the usual antityphoid inoculations.

At the time they left Minnesota we were having much intestinal influenza with a group of symptoms consisting (in a typical case) of fever, nausea, vomiting, gastric and intestinal pain, and diarrhea. The stools were offensive and contained much mucus and a varying amount of blood. Not all cases showed all the symptoms mentioned, but a sufficient number of them to warrant their classification under the same head.

The patients became sick on the boat, not all at the same time, but at intervals of a few days. Two little boys in the party were ill at the time of the boat's arrival in London, and were removed to the hospital, where the examination of the stools was made. The mother, who had been sick before the boys, but merely with diarrhea, became ill again after landing, the symptoms being identical with those of the two boys.

Ernest W. Cowern, M.D., North St. Paul, Minn.

CHILOMASTIX MESNILI ON LETTUCE

To the Editor:—In The Journal, October 24, p. 1288, in the abstract of discussion of the paper of Dr. Herman Bundesen on raw foods, appeared the statement of Dr. F. C. Johnson, New Brunswick, N. J., that he had observed a case of colitis develop following the eating of California lettuce.

I communicated with Dr. Johnson, and found that he referred to a technician as being a student of Dr. Kofoid of the University of California. I have communicated with Dr. Kofoid, and present a copy of his reply.

Out of justice to the lettuce industry of California, and in order that your readers may not have any misapprehension regarding the lettuce grown in California, may I ask that you give Dr. Kofoid's letter publicity.

W. M. Dickie, M.D., Sacramento.
Secretary, California State
Board of Health.

Dear Dr. Dickie:—The statement made in Dr. Johnson's discussion of the article by Dr. Herman Bundesen on raw foods, which implies that the parasite *Chilomastix mesnili* is abundant on California lettuce, is an error. The parasite lives only in the human digestive tract, never lives on or in lettuce in any form, and dies very quickly in the motile stage at temperatures below that of the human bowel. It does not live in fresh water or soil. The parasite is transferred from person to person by family infection and the soiling of wash bowls in washing hands, fouled with human feces. The encysted stage might survive for a brief time in soil or water, but so far as we know fecal infection is the only route by which this and other intestinal protozoa are transferred from one person to another.

As you doubtless know, the laws in California regarding the use of night soil in gardens are strict, and also that lettuce is grown in California fields under the most hygienic conditions and in the brilliant sunshine, which is lethal to most if not all disease germs.

Chilomastix mesnili has never been found in any domestic animals and would not be transferred by the use of fertilizer derived from domestic animals.

C. A. Kofoid, Berkeley, Calif.
Department of Zoology, University of California.

SCIENTIFIC PREDICTIONS OF NOVELISTS

To the Editor:—The recent advertisement of a book on "Aviation Medicine" (The Journal, Dec. 12, 1925, p. 28) recalls several of the advertisements appended to Rudyard Kipling's "With the Night Mail," a story of 2000 A. D. As there prophesied, some of the books of the future will be: "Air Currents and Epidemic Diseases"; "Disease and the Barometer"; "Health Resorts of the Gobi and Shamo"; "High Level Bacteriology."

One of the characters in that fantastic tale of life in the air remarks:

> I've read in a book that savages [meaning twentieth century people] used to haul their sick and wounded up to the tops of hills because microbes were fewer there. We hoist 'em into sterilized air for a while. Same idea.

Thus do the speculative novelists keep in the vanguard of progressive medicine.

Louis J. Bragman, M.D., Syracuse, N. Y.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RESUSCITATION

To the Editor:—Using the prone method for resuscitation, as you have recommended, what information can you give on the following points: How long can a body remain in water and yet be successfully resuscitated? What are some of the records relative to length of time the prone method has been exercised before the victim became conscious? The questions apply to drowning. Please also advise regarding resuscitation from electric shocks.

H. N. Munger, New York City.

Answer.—In The Journal, Sept. 6, 1924, pages 756-765, appeared three articles on resuscitation:

Maclachlan, Wills: Resuscitation after Electric Shock.
Henderson, Yandell: Resuscitation from Carbon Monoxid Asphyxia, from Ether or Alcohol Intoxication, and from Respiratory Failure Due to other Causes; with some Remarks also on the Use of Oxygen in Pneumonia, and Inhalational Therapy in General.
Drinker, C. K.: Artificial Respiration in Electric Shock and Gas Poisoning.

As to method, the attitude of these writers is expressed in the conclusion of the third article:

"When we give all these methods a competent analysis, we are reduced to the selection of the prone pressure method of resuscitation as our great reliance for immediate emergency, and we turn to the oxygen-carbon dioxid inhalation method devised by Henderson and Haggard as the physiologic antidote for carbon monoxid asphyxia, and through simple inhalation apparatus practically allow the patient to administer this mixture to himself."

In the discussion following the papers of Maclachlan and Henderson, cases of resuscitation two and a half hours after electrical shock and cases of resuscitation after men had been submerged for from fifteen to twenty minutes were cited, in the latter one hour and five minutes elapsing before resuscitation.

Maclachlan recommended that artificial respiration should be continued without interruption (if necessary for four hours) until natural breathing is restored. "Cases are on record," he said, "of success after three and one-half hours of effort. The ordinary tests for death are not conclusive in cases of electrical shock."

As regards the length of time that a man may be completely submerged and then revived: It appears that considerable variations occur; but as the efficiency of the methods of resuscitation employed has varied greatly, it is difficult to decide whether the variations in the results are in the victims or in the procedures employed by the rescuers. It is probable that absolutely complete submergence for ten minutes, and perhaps less, may so far impair the respiratory center or bring the heart so completely to a standstill as to make the possibility of resuscitation doubtful. In cases in which persons are resuscitated after being in the water for fifteen or twenty minutes, it is probable that submergence is incomplete and that some partial breaths of air are obtained.

TREATMENT OF LICHEN PLANUS

To the Editor:—For the last four years I have been suffering from lichen planus. For a while it yields to treatment, but it recurs, perhaps as an anaphylactic reaction to meat, fish and even the slightest amount of alcohol, or any strenuous work or mental effort. Itching is especially troublesome. I have secured some relief with injections of cacodylate and autohemotherapy, but I should like to get some expert opinion as to prognosis and possible cure. There is no hereditary syphilis or alcoholism. I am 39 years old. Please omit my name.

M.D., Mexico.

Answer.—The most effective treatment for lichen planus consists in the intramuscular injection of 25 minims (1.5 cc.) of a 1 per cent solution of mercuric chlorid in physiologic sodium chloride solution twice weekly. From twelve to twenty-five injections must be given. Practically every case will yield sooner or later to this treatment if properly carried out. Internally, the use of arsenic and mercury combined will be found beneficial; but these drugs should not be given with the injections.

Areas that are especially troublesome because of itching or of visibility can be removed, as a rule, with roentgen rays. The dosage should be about one-half skin unit every ten days for three doses, if necessary.

Exposure of the lumbar spine to the proper dosage of roentgen rays has been reported recently to be almost a specific by several French writers (*Bull. Soc. de dermat. et syph.*, 1925, p. 6).

VITAMIN — FRACTURE OF THE FEMUR

To the Editor:—Please give me authoritative answers to the following: 1. Pronunciation of vitamin. 2. In fracture of the femur, using direct bone extension, at what earliest age is it safe to apply calipers to the condyles? Please omit my name if published.

M.D., Illinois.

Answer.—1. According to the Standard Dictionary, vitamin is pronounced vi'ta-min".

2. In growing children, that is, up to the time the epiphyses unite, and after which time no more longitudinal growth occurs, it is imperative to avoid the region of the condyles with any caliper or similar device to obtain a direct bone traction, because of the danger of injuring the epiphyseal cartilage and thus interfering with the normal growth. The calipers should be inserted one fingerbreadth above the epicondyle, for the epiphyseal line is located almost exactly on a level with the epicondyle.

In infants, calipers are not indicated. In infants, Matti's technic is practical. Matti hangs the extremity in the usual Schede vertical suspension, using a pulley and weights, the former being suspended on a metal arch over the bed. A Balkan frame, such as is found in most modern hospitals, is convenient. A stockinet is applied to the child's leg and thigh going above the line of fracture, as the pull is on the soft parts, a metal ring is sewed to the distal free end of the stockinet, and to this ring four ropes are tied at equal distances apart, and these four are attached to the rope and pulley. Enough weight is used to hold the child's buttock off the bed. In infants, consolidation will occur in three weeks. Sinclair glue is used to glue the stockinet to the skin of the leg and thigh. This is heated before using and is applied warm. The device is removed by wetting.

RUBBER GLOVES — STERILIZATION FOR PREVENTION OF CONCEPTION

To the Editor:—Please supply me with the following information: 1. Who first suggested the use of rubber gloves in surgery, and who first introduced them? 2. Is it justifiable for a gynecologist, at a woman's request, to sterilize her by an operation on the fallopian tubes: (*a*) if she is perfectly healthy, as a means of preventing conception; (*b*) if she has a condition threatening her health or life?

George J. Strean, M.D., Chicago.

Answer.—1. According to Garrison's History of Medicine, the rubber glove was introduced in surgery by Halsted in Baltimore, in 1890. However, the following is a quotation from Watson's Practice of Physic, chapter on puerperal peritonitis, p. 819, published in 1858:

> In these days of ready invention, a glove, I think, might be devised, which should be impervious to fluids and yet so thin and pliant as not to interfere materially with the delicate sense of touch required in these manipulations. One such glove, if such shall ever be fabricated and adopted, might well be sacrificed to the safety of the mother in every labor.

De Lee, furthermore, in "Principles and Practice of Obstetrics," edition 4, p. 864, writes:

> Abstention from obstetric practice was enforced on physicians who had a succession of puerperal fever cases, and even the use of impervious gloves was recommended by Steinau in 1855.

2. There is no recorded court decision passing on the liability of a surgeon for sterilizing a patient at her own request for either of the purposes named above. The trend of legal discussion is to the effect that it is at least doubtful whether a man or a woman, in good health, can consent to a sterilizing operation, so as to protect the operator against criminal prosecution, or against civil suit by the patient himself or herself. It is agreed, however, that in cases in which such an operation is reasonably necessary to protect the life or health of the patient, such consent can be given. Probably valid consent can be given, too, to the sterilization of a diseased or defective person when such an operation is necessary to protect the health or life of a healthy spouse or to prevent the birth of diseased or defective children, even though the operation may not be necessary to protect the health or life of the person operated on; but the validity of consent in this case does not seem to be so well assured.

ECZEMA OF THE FINGERS

To the Editor:—Can you help me with a case of eczema of the insides of the fingers? Fine vesicles (white) come out and break laterally; when ruptured, they fill at once, or within fifteen minutes. There is no pain or itching, but they do much harm. Calamine drys them for a while, and then they come back as thick as ever. Soaps seem to irritate. Syphilitic, nerve, gastric and symptomatic treatment have failed. The Wassermann reaction is negative; so is examination of the urine. The patient is 36, a traveler, very nervous and anxious. He eats and sleeps well, and is not troubled with constipation. He is quite fractious and looks as if he might some day go to the madhouse. Please help me out with him. What will cure his fingers?

P. A. Boykin, M.D., Jeanerette, La.

Answer.—The condition described may be (1) a recurrent toxic eruption, (2) dermatitis venenata or (3) a fungus infection.

1. A recurrent toxic eruption would be characterized by sudden onset, bilateral symmetry and uniformity of the vesicles. The attack would tend to run a definite course, and at a given time the vesicles would all be in the same stage of evolution or involution. A systemic examination for foci of infection, gastro-intestinal disturbance, and sensitization to protein or drugs should be made.

2. In dermatitis venenata, the vesicles would be very superficial and would appear after erythema was well developed. There should be a history of contact with external irritants, such as Japanese lacquer, primroses, dyed fur or chemicals. There would be partial or complete asymmetry, and the onset would occur at the point of contact with the irritant. In some cases it is possible to discover the irritant only by having the patient keep a daily double column of events: in the one, a detailed account of his actions and, in the other, the time and manner of each of the attacks.

3. If a fungus infection, the lesions would consist of deep seated vesicles in various stages of evolution and involution; brown areas representing absorbed vesicles; pink, shiny areas

with collarettes of upturned scales; and desquamation. One hand would probably be more involved than the other. Similar lesions would probably be found between the toes. The fungi would be found microscopically by cutting off the tops of the vesicles, inverting them on a glass slide, covering with 15 per cent sodium hydroxide solution, heating gently, and pressing out the tissue under a cover glass. The fungi are best seen with the high dry objective, and appear as long mycelial threads. If the fungi are found, the condition should yield to the daily application of 10 per cent chrysarobin in solution of gutta percha, N. F. ("traumaticin"). Care should be exercised in the application of this drug, because if the disorder is not due to a fungus, a severe dermatitis might be set up.

SCLERODERMA

To the Editor:—Would you approve of a thyroid gland transplantation for a patient with scleroderma? Thyroid preparations, ultraviolet rays, massage and hydrotherapy have been given a trial with but slight success. Is there any danger of hyperthyroidism after the transplantation? Is there any better method? What is in your opinion the most promising treatment of scleroderma (sclerodactylia)? Please omit my name.

M.D., Michigan

Answer.—In some cases of diffuse scleroderma there is perhaps great improvement, even relief, from the use of thyroid substance by the mouth. In other cases it is not efficient. In circumscribed scleroderma (morphea) it is very much less likely to be useful, if it is ever so. This case, from the fact that the patient has sclerodactylia, is probably a diffuse scleroderma. In such a case we would expect thyroid transplantation to be altogether experimental and its consideration hardly warranted unless the patient showed improvement from less drastic thyroid treatment.

TREATMENT OF ACUTE APOPLEXY

To the Editor:—Since those of us who are not only neurologists but also internists differ widely as to the indications for venesection in apoplexy, I thought you would tell us the most commonly accepted views on this question. Also, are there any indications for lumbar puncture in acute apoplexy; or is not such a procedure nearly always contraindicated?

J. F. W. Meagher, M.D., Brooklyn.

Answer.—Apoplexy is the name not of a disease but of a symptom; the treatment to be adopted depends on the nature of the lesion, and every effort should be made to reach an exact diagnosis. The lesions that most commonly cause apoplexy are thrombosis, hemorrhage and embolism of intracranial blood vessels. In the case of hemorrhage, the blood pressure is often high and the heart action forcible; the pressure within the cranial cavity also is increased by the extravasation of blood. In such cases, cardiac sedation and measures to lower intracranial tension are indicated. It is in these cases that venesection and lumbar puncture may be resorted to. Some authorities even advise a decompression operation and cerebral puncture when the increase of tension is great, as this condition may itself be the cause of death. But the situation is entirely different in cases of thrombosis or embolism. In them the heart action is usually feeble, and thrombosis most often occurs during sleep when the circulatory pressure is lowest. There is also no rise in intracranial pressure, at least not in the earlier stages before inflammatory reactions have occurred. In apoplexy due to thrombosis or embolism, therefore, the indications are for supporting treatment and heart stimulation rather than depletion; venesection and lumbar puncture are absolutely contraindicated. When, however, a patient is found unconscious and other indications are inconclusive, lumbar puncture may at times be performed with the object of securing aid in diagnosis rather than for treatment.

HAIR DYE

To the Editor:—How may one make a good dark brown hair dye that is not dangerous to use?

A. D. Galloway, M.D., Clayton, Wis.

Answer.—An infusion of henna leaves (50 Gm. to 1,000 cc. of water) is strained, and evaporated to one eighth of its volume, or about 120 cc. (4 ounces). To this, 60 cc. (2 ounces) of alcohol U. S. P. is added, and the mixture is filtered through paper. To darken, ammonia water is added to the filtrate. It should be tried out carefully before using, to make sure that the shade is the one desired. This is a safe dye. By adding a solution of silver nitrate it can be made still darker; but caution must be used to get none of it on the scalp, or a slight element of danger enters into its use.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 12. Chairman, Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, Jan. 5-6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

Colorado: Denver, Jan. 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: Jan. 12. Sec., Dr. Edgar P. Copeland, Apt. 104, Stoneleigh Court, Washington, D. C.

Hawaii: Honolulu, Jan. 11. Sec., Dr. G. C. Milnor, 401 So. Beretania St., Honolulu.

Illinois: Chicago, Jan. 19-21. Supt. of Reg., Mr. V. C. Michels, Springfield, Ill.

Indiana: Indianapolis, Jan. 12. Sec., Dr. W. T. Gott, 421 State House, Indianapolis.

Kansas: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

Minnesota: Minneapolis, Jan. 5-7. Sec., Dr. Thomas S. McDavitt, 734 Lowry Bldg., St. Paul.

National Board of Medical Examiners: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

New York: Albany, Buffalo, New York, Syracuse, Jan. 25-28. Chief, Mr. Herbert J. Hamilton, Department of Education, Albany.

North Dakota: Grand Forks, Jan. 5. Sec., Dr. George M. Williamson, Grand Forks.

Oregon: Portland, Jan. 5-7. Sec., Dr. N. C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia, Jan. 26-30. Act. Sec., Mr. C. D. Koch, Harrisburg.

Rhode Island: Providence, Jan. 7. Sec., Dr. Byron U. Richards, State House, Providence.

South Dakota: Pierre, Jan. 19. Dir. Med. Licensure, Dr. H. R. Kenaston, Bonesteel, S. D.

Utah: Salt Lake City, Jan. 5. Director of Reg., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

Vermont: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

Washington: Olympia, Jan. 12. Sec., Mr. William Melville, 15 Insurance Bldg., Olympia.

West Virginia: Charleston, Jan. 19. Sec., Dr. W. T. Henshaw, State Health Department, Charleston.

Wisconsin: Madison, Jan. 12-14. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

Wyoming: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

Maine July Examination

Dr. Adam P. Leighton, Jr., secretary of the Maine Board of Registration in Medicine, reports the written examination held at Augusta, July 7-8, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 27 candidates examined, 26 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Georgetown University School of Medicine	(1925)	85
Boston University School of Medicine	(1925) 79, 81, 84, 84,	84
Harvard University	(1921) 87, (1925) 85,	86.9
Tufts College Medical School	(1925) 78, 80, 82, 83, 83.8, 84.6,	88
University and Bellevue Hospital Medical College	(1925)	84
Hahnemann Med. College and Hospital of Philadelphia	(1886)	75.5
University of Pennsylvania School of Medicine	(1924)	86
Medical College of the State of South Carolina	(1924)	86
University of Vermont College of Medicine	(1924)	87
McGill University Faculty of Medicine	(1923) 82.6,	83.5, (1925) 83, 85, 86.3

FAILED

College	Year Grad.	Per Cent
University of Montreal Medical Faculty	(1925)	73

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
State University of Iowa College of Medicine	(1920)	Iowa
Harvard University	(1923)	Illinois
University of Michigan Medical School	(1899)	Penna.
Women's Medical College of Pennsylvania	(1889)	Penna.
McGill University Faculty of Medicine	(1902)	New Hamp.

Virginia June Examination

Dr. J. W. Preston, secretary of the Virginia Board of Medical Examiners, reports the written examination held at Richmond, June 23-26, 1925. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Seventy-three candidates were examined, all of whom passed. Two osteopaths were licensed to practice osteopathy. Eighteen candidates, including 1 osteopath, were licensed by reciprocity, and 4 by endorsement of their credentials. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Howard University School of Med.	(1924) 80, (1925) 83.5, 84,	87
University of Louisville School of Medicine	(1924)	87

Tulane University of Louisiana School of Medicine	(1924)	90
Maryland Medical College	(1911)	85
Washington University School of Medicine	(1922)	88
Columbia University College of Phys. and Surgs.	(1925)	88
Hahnemann Med. College and Hosp. of Philadelphia	(1924)	84, 86
Medical College of Virginia	(1925)	79 82, 83, 84, 84, 84, 85, 85, 85, 85, 85, 85, 86, 86, 87, 87, 87, 87, 87, 87.5, 88, 88, 88, 88.7, 89, 89, 90, 90, 90, 90.5, 91, 91, 91, 93, 93
University of Virginia Department of Medicine	(1921)	87
	(1925)	79, 83, 83, 84.5, 85, 85, 85, 85, 86, 86, 86, 86, 86.4, 86.5, 87, 87, 88, 88, 88, 88, 89, 89, 90, 90, 91
University of Toronto Faculty of Medicine	(1918)	86
Osteopaths		84, 85

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Howard University School of Medicine	(1923)	Dist. Colum.
Atlanta Medical College	(1914)	Georgia
Emory University School of Medicine	(1922)	Georgia
Loyola University School of Medicine	(1916)	W. Virginia
Northwestern Univ. Woman's Med. School, Chicago	(1891)	Illinois
University of Louisville School of Medicine	(1912)	N. Carolina
	(1924)	Kentucky
Johns Hopkins University Medical Dept.	(1915), (1924)	Maryland
University of Maryland School of Medicine	(1913)	N. Carolina
	(1923)	Maryland
University of Michigan Medical School	(1924)	New York
Bellevue Hospital Medical College	(1891)	Dist. Colum.
Department of Medicine University of Pennsylvania	(1901)	Penna.
Jefferson Medical College of Philadelphia	(1923)	W. Virginia
University of Nashville Medical Department	(1909)	California
University of Tennessee College of Medicine	(1924)	Tennessee
Osteopath		New Jersey

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Indiana University School of Medicine	(1917)	U. S. Navy
University of Louisville School of Medicine	(1924)	U. S. Navy
Jefferson Medical College of Philadelphia	(1924)	U. S. Navy
University of Pennsylvania School of Medicine	(1917)	U. S. Navy

Book Notices

THE HEALING GODS OF ANCIENT CIVILIZATIONS. By Walter Addison Jayne, M.D. Cloth. Price, $5. Pp. 569, with 7 illustrations. New Haven: Yale University Press, 1925.

This is the second work made possible by the publication fund established in memory of Philip Hamilton McMillan, Yale '94. The author, emeritus professor of gynecology and abdominal surgery in the University of Colorado, writes that his study was made in odd moments purloined from a life of active practice. The work is scholarly, thorough, and based on extensive research among English, French and German writers. Not by its style, but by its subject matter, the introduction recalls the "Dionysus" of Pater. It is an excellent essay, an invaluable part of the book, and gives unity to the mass of details that follow. Herein is traced the mode of development of religions, the religious psychology of ancient peoples, and the relation of religion to disease; for example:

> It is a matter of common knowledge that from the dawn of history the healing art has been more or less intimately connected with religion. . . . On the free soil of Hellas, however, . . . developed, under hippocratic influence, a scientific spirit, ethical ideals, and a definite line of cleavage. . . .
>
> Mankind instinctively is dependent upon the Supreme Power for life and all benefits, and it is not a matter for surprise that many in our communities, rejecting modern professional ideas of disease, its causes and its treatment, prefer to rely, as did the people of old, upon divinity for the preservation of health and for relief from all physical ills. The prevalence of this faith, side by side with "new thought" and the many variant forms of mental healing resulting from modern psychological studies, excites a very special interest in the types of belief of those ancient peoples who exercised the religious healing function. . . .
>
> In most countries herein referred to there were physicians who practiced independently, side by side with temple-healing. Some were governed by custom, others by law. It is assumed that, for the most part, they gathered their medical knowledge from folk-lore and experience or from the priestly class; and it is known that they frequently cooperated with the priests, to whom they looked for guidance. Such independent work undoubtedly had a very definite influence on the development of the various ancient theories of disease and on the more material, practical therapeutics, fostering scientific methods and a gradual relaxation of the hold of religion on the healing art; but for these coincident phases in the history of medicine the reader is referred to the many general treatises on the subject.

The structure of the book is simple and orderly. Eight chapters take up, respectively, the healing gods of the Egyptians, Babylonians and Assyrians, pagan Semites of the West, Indians, Iranians, Greeks, Romans and Celts. In turn, each chapter is divided into two parts: first, a general survey of civilization, religion and medicine, and, second, an alphabetical "who's who" of the healing deities. A voluminous bibliography and a well made index close the book. The work should appeal to a wide range of readers. Physicians interested in the cultural aspects of medicine, archeologists, students of religion, paleographers, historians and those whose fields lie in the ancient classics of Eastern and Western civilizations will derive pleasure and information from Dr. Jayne's conscientious study.

LABORATORY MANUAL IN GENERAL AND PATHOGENIC BACTERIOLOGY AND IMMUNITY. By Veranus Alva Moore, M.D., V.M.D., Professor of Comparative Pathology, Bacteriology and Meat Inspection, New York State Veterinary College at Cornell University, and William Arthur Hagan, M.S., D.V.M., Professor of Bacteriology and Parasitology, New York State Veterinary College at Cornell University. Cloth. Price, $2. Pp. 252, with 39 illustrations. Boston: Ginn and Company, 1925.

This manual has been compiled primarily for the use of veterinary students but contains a sufficient amount of material for general courses offered in most colleges. It is a rewritten edition of Moore's manual, first published nearly twenty years ago. There are thirty-three exercises in general bacteriology and thirty-two in pathogenic bacteriology and immunity. The work for each exercise is stated definitely and is followed by detailed descriptions of the procedures. In many exercises much more material is given than the student is expected to cover, thus making the book generally useful as a complete laboratory working manual and more flexible to the ideas of different teachers. The methods are accurately described and down to date. This is one of the best laboratory books for teaching purposes that has appeared.

PSYCHOGENESE UND PSYCHOTHERAPIE KÖRPERLICHER SYMPTOME. Von R. Allers, J. Bauer, L. Braun, R. Heyer, Th. Hoepfner, A. Mayer, C. Pototzky, P. Schilder, O. Schwarz, J. Strandberg. Herausgegeben von O. Schwarz, Privatdozent an der Universitat Wien. Paper. Price, 27 marks. Pp. 481, with 10 illustrations. Vienna: Julius Springer, 1925.

This is a combination of medical philosophy and psychology. An extensive general introduction, the philosophical portion, discusses the problem of the human organism; the body-soul concept from the standpoint of philosophy and natural science; individual make-up as a basis of nervous disorders, and concepts and methods of interpretation. This is rather long and, though interesting to the general reader, offers little of practical use to the physician. The real interest to medical men begins in the second part, written by specialists. Thus, Hoepfner writes on psychogenic speech disorders; Braun, on psychogenic disorders of the heart, on cardiac asthma and on functional disturbances of respiration; Heyer, on psychogenic disorders of the gastro-intestinal tract; Strandberg, on the psyche and dermatology. Schwarz describes faults of psychogenic micturition; Mayer, psychogenic gynecology; Schwarz, psychogenic disorders of the male urinary organs, and Pototzky, psychogenesis and psychotherapy of organ symptoms in children. The third part of the book is devoted to a summary of psychotherapy. The book treats of a theme rarely encountered in medical literature. The tendency is from the purely materialistic to the spiritual, from the intellectual to the emotional. The same tendency is beginning to change medical thought. Following the materialistic conception in medicine, after which the human body was considered only as an appropriate subject for the laboratory, there has come a reaction in favor of psychologic thinking and treatment. Though a knowledge of somatic medicine in all its details is essential for a correct diagnosis, the treatment of the patient must make use of psychologic means. Few physicians will dispute the fact that the psyche and human personality, normal and abnormal, must be studied psychologically, but many fail to realize that this applies also to symptoms that are caused by organic disease. We are bound to admit that there exists a psychogenesis of bodily symptoms. Indeed, the authors of this book believe that the recognition of this fact constitutes the most concrete and far-reaching advance in practical medicine; more than that, they consider this the basic foundation of the scientific medicine of today. The editor has set his co-workers the task of gathering information regarding our knowledge of the psychogenic influences on organic functions. Not only have they succeeded in giving a good account of the phenomena themselves, but they have also indicated the methods to be employed in treating the patient as well as his disease. This work has greatly deepened our knowledge of the psychic concomitants of organic disorders, for the authors have made profound studies and have furnished convincing proof for their statements. They are of the opinion that a reawakening of therapeutic optimism has occurred in modern medicine and that the therapeutic nihilism of old has seen its day. It is quite significant of the modern trend that most of the contributors to this work are from Vienna, the former hotbed of therapeutic nihilism and at present the great center for all sorts of therapeutic experiments. The last part of the book deals in an excellent manner with current psychotherapeutic systems, especially that of Adler and Freud, though Dubois' persuasion method and suggestion by hypnosis are given due credit.

Injuries of the Wrist. A Radiological Study. By Dr. Étienne Destot. Translated by F. R. B. Atkinson, M.D., C.M. Cloth. Price, 18 shillings net. Pp. 176, with 87 illustrations. London: Ernst Benn Limited, 1925.

This is a radiologic study of injuries of the wrist. Destot began his work in preparation for the volume in 1897, and did not finish it until 1918, shortly before his death. It is a monograph in the highest sense of the word, describing the results of his researches and his experiences. His deductions are based on a wealth of clinical material probably unequaled in the experience of any other observer. It includes more than 150 personal cases of fractures of the scaphoid; twenty-four cases of fractures of the semilunar, a much rarer lesion; four cases of fracture of the os magnum; six cases of fracture of the cuneiform, and four cases of fracture of the trapezium. The author points out that fractures of the latter three bones are of only slight importance, because of their rarity, and that one of his objects is to show what a strong physiologic connection binds fractures of the radius to these different carpal bones, and why and how the scaphoid and the semilunar bear the brunt of the injuries. Between sprain, dislocation of the scaphoid and of the semilunar, dislocation of the carpus, fractures of the scaphoid alone, or those associated with fractures of the radius and of the semilunar, there is only a difference of degree and of anatomic variation; the latter depends on the points of application of the force, according to the different position in falling. The author takes issue with M. Delbet's theory, which denies the possibility of reduction of the semilunar. Indeed, Destot reports that all the cases under his care since 1898 were reduced even at the end of twenty-five days, and in one case after three and one-half months. Independent of the scientific interest in this question, there is the possibility of rapidly bringing back to the injured person the use of the hand, which, if left to itself, or operated on later, often remains greatly incapacitated.

The author explains at great length that "in the wrist the scapholunary system is an intermediate joint which doubles the amplitude of the movements of the hand, adding to the displacements of the radiocarpal and midcarpal joints and transmitting to the second row the shocks it receives from the forearm. The scaphoid and the semilunar are wedged between the malleus of the forearm and the incus of the second row united to the metacarpus, and according to the numerous positions on falling, the amount of violence, and numbers of different conditions, will show special lesions." The best proof that can be given of the importance of the scaphoid and of the semilunar is the frequency of their lesions. The author points out that if one will take a thousand cases of injury to the wrist—fractures of the radius, lesions of the carpus or mixed lesions—he will always find that the scaphoid and semilunar play a part. The author attributes so much value to the scapholunary system that he speaks of dislocation of the carpus in order to show that the different luxation of the scaphoid and of the semilunar encountered in the majority of the plates of so-called dorsal luxation of the os magnum is the dominating factor, as he demonstrated by his pathologic study dating back to 1898. He insists that when one speaks, for example, of isolated fractures of the semilunar, one ought to add "with subluxation or fracture of the scaphoid, or even fracture of the radius." In explanation, he states that "the carpal condyle cannot be flattened or diminished in height in the region of the semilunar without bringing in its train a diminution in the height of the column of the scaphoid; and the latter must dislocate, break or become impacted in the radius to compensate for crushing of the semilunar in the same way as, when the scaphoid is crushed, the semilunar must be dislocated or broken." Sometimes the semilunar, sometimes the scaphoid lesion, is primary. But whatever may be the method of action of the force, the lesions of the two bones are inseparable.

The study includes the anatomy and the physiology of the wrist; sprains and subluxation of the scaphoid and of the semilunar; fractures of the scaphoid; dislocation of the carpus and midcarpal luxation; fractures of the semilunar; rare fractures of the other bones; radiocarpal luxation, and the different forms of fractures of the lower extremity of the radius. The work is richly illustrated with roentgenograms and diagrammatic line drawings. There is a full bibliography, which has been revised and edited by the translator. This work is an ideal contribution to surgical literature.

Cancer. Post-Graduate Lectures, Delivered under the Auspices of the Fellowship of Medicine. Edited by Herbert J. Paterson, with a preface by Sir John Bland-Sutton, LL.D., F.R.C.S., President of the Royal College of Surgeons. Cloth. Price, $4. Pp. 186, with illustrations. New York: William Wood & Co., 1925.

A monograph on cancer embodying no fundamentally new facts concerning the disease may seem to many an unnecessary encumbering of the literature. The intensive study of the subject by so many workers the world over will some day doubtless lead to the discovery of the cause of the disease or its successful treatment. This volume fulfils the need for a brief clinical monograph on the most important forms of cancer. It consists of a series of lectures edited by Paterson. The medical aspects and pathology of the disease are considered in the first two chapters; then follow chapters on cancer of the larynx, esophagus, breast, stomach, uterus, kidney, bladder and rectum. The text is interestingly and concisely written. Brief as it is, it presents in adequate detail the pathology, diagnosis and treatment of the forms of cancer outlined.

Le sinus sphénoidal. Anatomie—Exploration chirurgie. Par Georges Canuyt, Professeur de clinique oto-rhino-laryngologique à la Faculté de médecine de Strasbourg, et Jean Terracol, Chef de clinique oto-rhino-laryngologique à la Faculté de médecine de Strasbourg. Paper. Price, 25 francs. Pp. 278, with 134 illustrations. Paris: Masson et Cie, 1925.

This extensive monograph on the sphenoid sinus contains a discussion of the embryology and anatomy of that nasal accessory sinus and of the ethmoidal cells. The authors, in contrast to the habits of many European writers, refer often in detail to many English and American authorities. Emphasis is given the optic canal and the optic nerve in the relations of the latter to the sphenoid sinus and posterior ethmoidal cells. There are numerous drawings and diagrams in the book, among which are those illustrating the various relations of the hypophysis, of the optic nerve, and of other cranial nerves. Then follows a discussion of the ethmoidal mucosa, together with methods of examination of the nose and nasal accessory sinuses. Considerable space is devoted to the radiography of the head and nasal sinuses, including the use of buccal films. The operative procedures are thoroughly discussed, the two principal routes, by way of the nasal septum and by way of the turbinates and posterior ethmoidal cells, being completely described. The authors believe that the route by way of the turbinate and posterior ethmoids is the more complete operation, especially if the ethmoids are involved. If, on the other hand, there is no disease of the ethmoidal cells, the septal route is probably the better. At the end of the book is an extensive bibliography, which the two authors in their modesty think is rather incomplete, but its perusal leads one to the opposite view. Altogether this seems an excellent book, written with the usual French clarity and at the same time with that attention to details which is usually found most often in German works.

Medicolegal

Testimony of Experts—Belief in Spiritualism

(Franzman's Executor v. Nalty et al. (Ky.), 271 S. W. R. 1034)

The Court of Appeals of Kentucky, in reversing a judgment which was rendered in favor of the contestants of a will, says that, although the testimony of nonexpert witnesses will not be entitled to probative effect beyond that justified by the facts to which they depose concerning the acts, conduct and conversation of a testatrix, a different rule obtains with respect to the testimony of physicians and alienists who are classed as experts. The professional opinion of physicians and alienists concerning the mental condition of a testatrix, even though based on facts and circumstances which may not in the opinion of a layman, even a court, induce the belief and opinion expressed by the experts, are competent, and make mental capacity a question for the jury. There was perhaps something more than a scintilla of evidence in this case tending to show that the testatrix was without mental capacity to make a will at the time she attempted to do so, but this could not be based on the fact that she believed in spiritualism, for this court has expressly held that such belief is not evidence of mental incapacity.

Lack of Pregnancy in Rape Case

(People v. Whitmore (Mich.), 203 N. W. R. 87)

The Supreme Court of Michigan, in affirming a conviction of the defendant for statutory rape, says that he requested the trial judge to instruct the jury that lack of pregnancy could be considered on the issue of whether there was sexual intercourse. This was refused. Counsel contended that, as pregnancy may be shown, the converse ought to be true. No authority was cited. Pregnancy speaks of sexual intercourse, but lack of pregnancy does not speak either way on the subject. It was at the most a subject for argument. There was no error in refusing the instruction.

Liability of Sanatorium for Death of Escaped Patient

(Arlington Heights Sanatorium v. Deaderick et al. (Texas), 272 S. W. R. 497)

The Court of Civil Appeals of Texas, in affirming a judgment of $5,000 damages against the defendant sanatorium for the death of one Deaderick, says that the latter had become so nervous and his mind so disturbed from the effects of influenza that his wife had placed him in charge of the sanatorium, from which he escaped early one morning, at a time when he was walking about the building without restraint and without any one to watch over him and to prevent him from leaving; about twelve hours later his dismembered body was found on a railroad track. The superintendent of the sanatorium knew that the patient was shrewd and cunning and might escape and hurt himself. The room in which he was confined had no lock and could not be well fastened. No one was watching him when he left the building. The jury was justified in finding that the defendant was negligent in permitting his escape, and in not discovering and returning him to the sanatorium before he was killed on the railroad track. The negligence in permitting his escape was the proximate cause of his death. If he had not been permitted to escape, he could not have gone to the railroad yards, and if he had not gone there he would not have been killed.

When a patient suffering with mental trouble is placed in a sanatorium, it is the duty of the officers and employees to use ordinary care in watching, caring for and treating him, and such duty is not performed if the patient is negligently permitted to escape, and the guilty party will be liable for all damages proximately arising from such negligence. That was the case made by the pleadings. If, as contended by the defendant, no liability would arise for injury to the patient wandering about the city, through the negligence of the defendant, no liability could attach for an escape no matter how negligent the institution might be. The negligence in permitting this patient to leave the sanatorium was a distinct wrong, and the defendant was liable for all injurious consequences resulting from such wrong. The petition stated a good cause of action against the defendant, and a general demurrer was properly overruled.

There was no testimony tending to show that the railroad company was guilty of any negligence in killing Mr. Deaderick, but if there had been, and the intervention of that cause did not break the natural sequence of events, the injury would be referred back to the wrongful act in permitting a demented man to leave the sanatorium. If it was negligent and wrongful for the defendant to allow this patient to leave the sanatorium and he came to his death while at large, through an act wrongful or not wrongful, the blame and liability for the death would make its way back to the wrongful escape as the proximate cause of the death.

If Mrs. Deaderick refused to allow her husband to be placed on the second floor of the sanatorium and thereby contributed to his escape, such action on her part would not be a defense to the negligence of the defendant in permitting the patient in broad daylight to walk off from the hospital and then in using no adequate means to recapture him. If they knew in the sanatorium that he had suicidal tendencies or a desire to escape and still accepted him, it was their duty to guard against his propensities and desires.

Contract for Service Is One for Continuous Service

(Lackey Mining Co. v. Chandler (Ky.), 272 S. W. R. 391)

The Court of Appeals of Kentucky says that plaintiff Chandler, a physician, owned a tract of coal land and leased the property to two men who assigned the lease to the defendant mining company. The lease contained a provision that during the operation of the lease the plaintiff should at his option have the privilege of serving as physician for the said mining operation, and should be paid therefor by the lessees or their assigns $50 a month. The plaintiff exercised his option to serve as physician of the mining operation, and continued to act as such for over a year. He then moved to a place a hundred miles away, with no intention of returning. He remained at that place for something over a year, and then moved back near to the mine, and asserted his right to act as physician for the mining operation under the contract. About twenty-one months later, he sued the company and recovered a judgment for $1,050, which the court of appeals reverses, remanding the cause for a new trial. After he had moved away, the company had arranged with another physician to do the practice, making his charges against the miners and filing his accounts with the company, the money being taken out of the wages of the miners and paid to him. When the plaintiff returned, the company was willing for him to do the work in that way; but he insisted on his right under his contract, and that was denied by the company.

The contract was a personal one. The plaintiff could not assign his contract to the other physician and put him in as his substitute, when he moved away, and the company had the right to make the new arrangement with the other physician. The plaintiff did not go to the other place temporarily, but to make it his home, and with no intention of returning. The contract provided that he should at his option during the operation of the lease have the privilege of serving as physician for the mining operation. When he exercised his option he became the physician for the mining operation during the operation of the lease. The legal effect then was the same as if the contract had provided that during the operation of the lease he would serve as physician for the mining operation. But such a contract is a contract for continuous service. The plaintiff was bound to fill his part of it with ordinary skill and diligence. He could not act as the physician for a year and then move a hundred miles away with no intention to return; and at the end of a year, finding it not as profitable at the new place as he expected, he could not return and demand the carrying out of a contract which he had abandoned by moving a hundred miles away, with no intention to return.

A contract for service is a contract for continuous service. When the party employed does not serve continuously but abandons the contract and voluntarily moves away, with no intention to return, he thus puts an end to the contract; and it is not in his power to revive the contract at a subsequent time when it may be to his interest to carry out the contract. Were the rule otherwise, he could quit any day and begin any day, as often as he pleased. The law allows no such liberty to either party in a contract of this kind. On the admitted facts, the circuit court should have instructed the jury peremptorily to find for the defendant company.

Testimony Regarding Capacity to Transact Business

(Stewart et al v. Miller et al. (Texas), 271 S. W. R. 311)

The Court of Civil Appeals of Texas says that the testimony of a physician that, in his opinion, a Mrs. Miller, who was a grantor in certain deeds, had sufficient mental capacity to transact any business that might be fully explained to her, was, over objection, admitted in evidence. This testimony involved the opinion of the witness as to Mrs. Miller's legal capacity to transact business, in addition to and as distinguished from her mental capacity to understand the nature and effect of her act in transacting such business, and should have been excluded. Again, the witness was permitted, over objection, to testify that Mrs. Miller, in his opinion, had sufficient mental capacity to understand the nature and effect of her action in transacting a business matter, if it was fully explained to her. This testimony involved an opinion of the witness as to the mental condition of Mrs. Miller, with reference to her capacity to understand business affairs. It involved a question of fact only and was properly admitted.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

Isthmian Canal Zone, Medical Association of, Ancon, Jan. 19. Dr. David L. Robeson, Ancon Hospital, Ancon, Secretary.

Sioux Valley Medical Association, Sioux City, Iowa, Jan. 19-20. Dr. R. F. Bellaire, Trimble Block, Sioux City, Secretary.

CONFERENCE ON PERIODIC HEALTH EXAMINATIONS OF APPARENTLY HEALTHY PERSONS

Held at Headquarters of the American Medical Association, Chicago, Nov. 20, 1925

Dr. Allen H. Bunce in the Chair

Purpose of Conference

Dr. J. M. Dodson, Chicago: A resolution passed by the House of Delegates at Atlantic City directed the executive secretary of the Bureau of Health and Public Instruction to arrange for this conference. The original resolution in reference to these periodic health examinations, passed in St. Louis, called on the county medical societies to take up this matter. A large proportion of the county medical societies have done nothing to stir up interest. Until they do, it is not likely to make much progress. The secretaries of the state medical societies are the agents to whom the profession must look to stir up the county units to activity. It is hoped that out of this conference will come a new and more effective impetus for the movement. There are many things that need to be done, especially in arranging for the education and arousing of the interest of physicians.

The Middle Aged Man

Dr. William D. Haggard, Nashville, Tenn.: I have endeavored to make periodic health examinations the key-note of the administration of the office to which I have been elevated. We have curtailed the infections to a large extent, and have increased longevity up to the average age of 55 by stamping out diseases and by improving infant welfare. What have we done for the middle aged man with the degenerative type of disease? We cannot reach him until he wants to come to us. At present he comes only when he is sick, when he is obliged to come. He wants to be examined, but we have denied him this boon. The most deadly blow that the organized medical profession can give to every type of irregularity is to examine patients so carefully that they will recognize the difference between this method and that of the man who seems to think that all he has to do is touch a vertebra and it will do the rest. If we can work out practical methods whereby all men, women and children in this country may know of the supreme benefits that will come to them from a thorough annual audit of their physical condition and an intelligent interpretation of the findings, we shall have accomplished much. Let me express the hope that every man of us will go back to his constituent medical society so imbued with the importance and magnitude of this idea that he will sell it to his medical society. If it is properly presented and properly executed, I think it will be the most far reaching and stupendous step that has been taken by forward looking American medicine in this century.

EDUCATING THE PHYSICIAN ALREADY IN PRACTICE

Papers and Discussions, with Demonstrations by Examinations of Physicians Themselves

Dr. Alec N. Thomson, Brooklyn: In December, 1922, the subject of health examinations was first discussed by our public health committee. In April, 1923, preliminary open discussion was started before the society by devoting the monthly meeting to the subject. During 1924, the special emphasis began. In March, the first leaflet was sent to all physicians and the examinations of our members began. In March also a Friday clinical lecture was given, with a demonstration of the technical procedure. In April, the stated meeting of the society was devoted to health valuation in relation to philanthropy, to business, to industry, to the church, to the profession—in short, to the community. In May, examination blanks were sent to all physicians in the borough by the Brooklyn health examination committee, and in June a letter and reprint on the types of physical examinations. In July, the report of findings was issued, and in September it was published in two medical journals. In September also a leaflet on the relationship of gonorrhea and syphilis to the periodic medical examination was sent to all physicians. In November, a leaflet was distributed reminding the profession that cancer control was predicated on the "health examination idea." During 1925, less intensive work has been done. The subject has not been allowed to lapse, however. The public health committee has been postponing the publication of its report until the A. M. A. Manual was off the press and in the hands of the society membership. This is now an accomplished fact.

The cost to the society has not been much actually, although a great deal in time and effort on the part of many individual members. In dollars, the whole affair has cost thousands. These in large part have been contributed by agencies interested in the community's health—willingly and without restriction—on a basis of joint participation in the field of community health, which is a much saner procedure than the usual cooperative affair wherein the medical profession "endorses" the activity of some program by signing on the dotted line following the words "approved by."

The next steps are the immediate publication of the committee report; the circulation in December of a leaflet on social hygiene, so called, in relation to health examination service; the publication of leaflets on tuberculosis and heart disease from the periodic medical examination point of view; and the continuation of the same idea if and when funds permit in relation to many subjects included in the field of preclinical medicine, such as diabetes, nephritis, blood pressure, temperature, overweight, underweight, child health and the like: in short, a "by mail" program designed to stimulate continuous medical training, using the health examination idea as the peg on which to hang modern medicine for the medical man in actual practice.

Postgraduate Courses

DR. ORRIN SAGE WIGHTMAN, New York: I am not going to talk on the title which has been assigned to me. I believe we are here to standardize our results, to exchange experience and to tell the way in which we have arrived at our conclusions. I stand now and always for the family practitioner. He has the confidence of his people; they will come to him. If he says a thing is good, they will believe it; if he says a thing is wrong, they will not believe in it. New York claims no leadership. We are trying to work our problem out from a little different angle and are going to give you the results. We thought that if we got physicians interested we would be doing something. We had seventeen lectures at the Academy of Medicine, and the attendance varied from 125 to 300 men. The men remember that periodic health examinations demand concentrated interest on the part of the general practitioner.

We felt that unless the thing was standardized in some way or another, we should all be going off on a tangent. We got out a questionnaire card. It is nothing but a memory chart so that when the examiner has finished, he will have covered the subjects. Then we correlated it with a little filing card. There is another factor: When a man is examined, he wants to know what it is all about. So we got up a certificate and the patient goes out with a tangible something. A lot of this preparation, as Dr. Dodson said, should be started in our medical schools. It was suggested that when physicians do their work better, there will be less need of public activity. If we are not living up to our obligations as county physicians, we would be glad to do better work, but we are not employed by any civic body to work for nothing. In New York County we are conducting a clinic, making periodic health examinations on people properly referred by charitable organizations. The patients are going to find out that we are not upholding public medicine, but are teaching the private physician to do private work better and are bringing private patients to him in a regular, legitimate way. It has gone very well so far.

Relative to the cost of these things, I can only tell what is working out in New York County. What is applicable to other places can be taken in whole or in part. We had no money to work with. We had to go to the foundations, and my hardest job has been to tell the foundations that they can help the medical profession 100 per cent if they will teach people to take this work to the family practitioner, and not try to exploit them in their public clinics. There can be no competition between city authorities and the family practitioner in his work.

Any work, to be effective, has got to meet the needs of the community. The main thing, after all, is that the men in our profession must be properly equipped, must conform to definite standards and must satisfy the person they are examining that he is being carefully looked over.

Typical Cases and End-Results of Periodic Health Examinations

ANNA M. RICHARDSON, New York: [A report of five cases illustrating the problems that the physician and the health client face in this type of medical service.]

DISCUSSION

DR. HAVEN EMERSON, New York: At the College of Physicians and Surgeons in New York, every student has a physical examination every year as a matter of routine. We have found cases of diabetes, early tuberculosis, errors of weight in ratio to the height and age, functional disturbances of the bowel, serious error of the eyes, and disturbances of hearing. I found myself asking and answering some of the following questions: Why do people ask for health examinations? Because of satisfactory service. Why do we ask questions dealing with the satisfaction of a person in his work and social relationships? Satisfaction in one's work or in one's social relationships is a functional measurement of the health of the individual and should be taken into account. What are the causes of success in managing this group of patients? Application of physiologic principles to the conduct of life, rather than the institution of medicinal or surgical therapy. It is exactly as necessary to be precise in one's physiologic hygienic advice as it is in the use of drugs. Why do we fail in periodic health examinations? Because of lack of conviction of the value of our own advice, our tendency to seek for a pathologic lesion instead of an error in the manner of life; because of our readiness to accept the patient's diagnosis and explanation of symptoms instead of measuring our findings against our own knowledge of the laws of physiology; because of our lack of imagination and resourcefulness in seeing the significance of minor deviations and developing simple devices for correction, and finally because of the lack of a thorough medical examination. Why is the training in this practice a broadening one to the physician? Chiefly because it shows the physician's dependence on the associated nonmedical services of the community. The only real distinction of scientific medicine as compared with many of the cults is that it has trained people to be capable of making a diagnosis between health and disease. The physician who cannot detect important diseases before those diseases have caused pain and interference with happiness or work is not fully skilled and trained.

These examinations are not exclusively for adults. If one is beginning at the beginning of life, one is dealing with the prenatal care of the expectant mother. On not less than four occasions during the period between the fifth month and the time of pregnancy, that woman should confront a physician or be reported to a physician by a competent observer. During the first two years of a child's life, not less than twelve examinations are required. Between the ages of 2 and 5, not less than once every six months that child should have a careful medical examination. From the age of 6 to the age of 25, there should be an examination once a year. If by the age of 25 the person is normally developed, he can be examined once every two years with safety, unless he is engaged in some hazardous trade. Between 45 and 65, he should be examined once a year, with this proviso: If he is out of proportion in weight or has an abnormal increase of blood pressure, or sugar or albumin in the urine, the examination should be made once every six months. That is absolutely essential. After the age of 65, he should be examined once every six months whether or not those conditions prevail. Up to the age of 65, that gives seventy-two occasions on which a human being needs to be advised by a physician. That is what good medical practice is doing now. The people of the United States are now prepared to ask for a good deal more than the medical profession is prepared to give.

DR. ORLANDO H. PETTY, Philadelphia: The first and most difficult thing to me is the education of the family physician. Too many family physicians think that all they need is a few of those lists, as the previous speaker referred to as being outlined in Dr. Emerson's summary, and feel that they can go ahead and make an accurate examination. I doubt whether 90 per cent of all the graduate or undergraduate family physicians whom I know are at all qualified to make a physical examination such as has been outlined. Until we demonstrate to them how to make a real physical examination, and then how to give hygienic advice, people will not go to them for periodic health examinations.

DR. ELLIOTT B. EDIE, Uniontown, Pa.: I want to stand right back of Dr. Petty. The general practitioner needs help if he is going to do these examinations efficiently. In my own experience, the most important thing has been to find focal infection early. The most striking things I have seen have been sinus defects that gave no evidence in the way of pain, discharge or anything else. The physician is not qualified to give advice as to the things that are recorded on the history blank. If the patient is overweight, the physician is not qualified to give a reducing regimen; he is not capable of prescribing exercise. In the future, the general practitioner is going to make health examinations and be the constant health adviser, not of his patient, but of his client.

DR. HENRY O. REIK, Atlantic City, N. J.: I said this morning that I was carrying on an educational program in New Jersey by broadcasting to the public advice to have these periodic health examinations made. We were getting a good deal of newspaper and other publicity. That part of the story is working out very satisfactorily. I said also that I was visiting the county societies and talking to the family physician from the medical aspect of this question. There I am not meeting with quite so much success. I fear that too large a percentage of the general practitioners are not today prepared to carry on this work. I realize perhaps my inability to put the story over in just the right way and to make them take it up and act on it. The general practitioner needs postgraduate instruction, if not in how to use instruments, he needs instruction in the technic of carrying out these examinations; he needs instruction as to the necessity for doing it and the necessity for making his examinations thorough and complete. I don't think it is so much inability to do it as it has been disinclination, perhaps a little bit of laziness. We have got to do a great deal of campaigning to start him up.

Dr. J. M. Dodson, Chicago: We are all agreed that the family physicians are the crux of the situation. In the cities it is not very difficult to get them together for instruction or to find the proper men to do it, but we have a large proportion of the medical men situated in the remoter parts, who are eager for this kind of instruction. Where are they going to get it? First, in places where the state medical association is organizing postgraduate medical courses, as they are in Michigan, that offers a solution. Second, the state university in most of the Middle Western states has a first-class medical school. The faculty of that medical school should be doing extension work. Where that is not possible, every hospital with an organized staff ought to regard itself as a continuation study and teaching center for the doctors of medicine in that vicinity. Finally, where that is not possible, a much less satisfactory solution would be that some member of the particular society who is seeking information and instruction should be selected to resort to a graduate school or the university school or some hospital, and then return to give instruction to his fellows. When we have taken the instruction to the men who have to do the work in the field, we shall have made a great step.

Dr. E. C. Hammond, Philadelphia: I was impressed in 1895 to see Dr. Haynes, a general surgeon, take out an ophthalmoscope and examine the patient's eyes. After we were in the elevator going to the operating room, I mentioned the fact. He said, "Doctor, every physician should be able to use every instrument of precision to make a diagnosis" The second point is in making a periodic health examination of women: shall one make a pelvic examination as a routine? Any woman having symptoms referable to the pelvis certainly should be examined. Supposing, in the routine examination, that she has no symptoms referable to the pelvis, should one suggest a pelvic examination? Frequently there are anatomic defects which are results of childbirth, not yet symptomatic, but subsequently are very apt to become so that can be anticipated by the examination. We feel that the carcinoma will be picked up more frequently and a great deal of good will be done by a routine pelvic examination if the woman will submit to it.

Dr. Alec N. Thomson, Brooklyn: We in Kings County have been conducting a great deal of our stuff by mail. We have taken away the alibi of the medical men in the entire borough, 2,600 of them; they can no longer say they never heard of a health examination. New York County has done a similar type of work to ours, but it has done it with lecture and demonstration, not on the medical men as we did it, which has contributed much to Kings County. The one outstanding feature perhaps of our work in Kings County is our general graduate education. Men began asking for more pediatrics. We are selling, if one chooses to use the term, courses throughout the state of New York in pediatrics and obstetrics very largely on the basis of a clinical opportunity to see demonstrated the use of examination instruments and to observe the methods of procedure.

Dr. Orrin Sage Wightman, New York: Not possession of the list but a knowledge of what was contained in the list would make a very good foundation for any man to work on. I am assuming that any normal physician can do this. I think they are a pretty intelligent group. I have a high regard for the country physician, and he has taught me a lot. There are some little trimmings that might come in the list that I am assuming a man doesn't use, but the average man does use them. Go to a country physician's office and see how nicely his place is fitted up. He has got to tell the patient what is the matter with him, and he can't refer him to a specialist at a stone's throw. There are two things in the list the average man might not ordinarily use, an ophthalmoscope and possibly a tuning fork. It is oversight in the use that is lacking. Haven Emerson gives us the ideal. It is my inspiration. I don't want a lot of his charts; I can't get them filled out. In his statistical records they are absolutely invaluable. If I give you mine and it is only one-quarter as good, next year we will get 50 per cent, and by and by we shall have 100 per cent. About the education of the physician, again I uphold him. Dr. Reik says we are not all prepared; maybe not, but I have learned much from people who came to me who didn't know anything.

Dr. Anna M. Richardson, New York: We examine vaginally any woman who has had children and also the women who are over 40, unless they very much object and there are no symptoms. In the young girls with symptoms, dysmenorrhea cases, we make a rectal examination usually. If we feel it is a case that is going to need treatment and the physician himself is not interested in treating gynecologic conditions, he will not make the examination at the time of the general health examination but will refer the patient directly for treatment and save her the experience of examination one time. We have information also in relation to the tests which are valuable. We find there is a good deal of discussion about the Wassermann test. It depends on the group one is handling. Our group of examinees were from the national health organizations, also the Y. W. C. A. secretaries, and we have not made a routine Wassermann test there. The ten cases that were referred were negative.

Education of the Laity by Newspapers, Magazine Articles and Circulars

Dr. Elliott B. Edie, Uniontown, Pa.: The literature of health examinations designed for the laity in the past has been lacking in distinction. Humanity desires security. Our publicity literature should promise men that periodic examinations will prolong their work period until they have made provision for old age. Mothers should be told that they may thus be kept in health until their children are launched in life. This is the security they want. We should assure apparently healthy persons that they are healthy and that the purpose of the examination is to keep them in that state. The head of an industry will feel more secure if shown that periodic examinations mean less time lost from sickness in his plant and more working years for trained men.

Our educational material must be diversified so that it will reach all sorts and conditions of men. A vital requisite to the success of any publicity is repetition. A campaign of long duration must be planned and carried through without interruption. It must always be kept in mind that instruction addressed to people *en masse* is attended with danger of incorrect application. We know the impossibility of making general rules that will apply in all cases. The public must know that a strong central organization exists to help in the work of health preservation. The preparation of our profession for the work of health conservation can be done only by the organization of a national department of health in Chicago, our medical capital, or in Washington, where it will be a part of the national government. In my opinion, a well organized department of health in Chicago will be more efficient than a government agency because it will be entirely under control of medical men and will have the advantage of our present organization. Financing of this organization should present no great difficulties, as it will make the strongest possible appeal to men of affairs and to associations having an economic interest in health and longevity. We shall have the confidence of the people when we convince them that we are in earnest. We must form a modern, efficient, broad-gage organization.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

170: 625-780 (Nov.) 1925

Biliary Aspects of Liver Disease. P. Rous, New York.—p. 625.
*Rheumatic Fever. H. F. Swift, New York.—p. 631.
*Value of Calcium Chlorid as Diuretic: Influence on Circulatory Mechanism. H. N. Segall and P. D. White; Boston.—p. 647.
*Value of Venesection in Treatment of Decompensated Heart. B. Gordon, Boston.—p. 671.
*Microcytosis in Hemolytic Icterus. B. R. Whitcher, New York.—p. 678.
*Magnesium and Calcium Content of Blood and Blood Plasma of Tuberculous Patients. E. W. Schoenheit, Asheville, N. C.—p. 689.
Nontuberculous Pulmonary Fibroses. D. W. Atkinson, San Francisco.—p. 693.
Study of Four Hundred and Fifty Cases of Epidemic Encephalitis. J. B. Neal, H. W. Jackson and E. Appelbaum, New York.—p. 708.
*Rôle of Focal Infections in Etiology of Eczema. H. W. Visher, Waukesha, Wis.—p. 723.
*Effect Produced on Enzyme Concentration of Duodenum by Oral Administration of Certain Commercial Pancreatic Preparations. D. N. Silverman, W. Denis and S. Leche, New Orleans.—p. 727.
Simple Lactating Adenoma of Breast. A. E. Bothe, Philadelphia.—p. 731.
*Pharmacologic and Therapeutic Properties of Sulphocyanates. J. B. Nichols, Washington, D. C.—p. 735.
Abdominal Pain Due to Epigastric Hernia. J. W. Hinton, New York.—p. 748.

Rheumatic Fever.—Swift points out that three diseases causing great economic loss are tuberculosis, syphilis and rheumatic fever. Not only are the early acute stages of these maladies time consuming in a period of life when the victims are of greatest value to the community, but their late manifestations, a consequence of their inherent chronicity, cause many persons to be so severely crippled that they are often less efficient productive units. The clinical history and progress of rheumatic fever are discussed, and one point in particular is stressed in the treatment: the period of rest needed is longer than is usually recognized or enforced. The average period for seventy-two cases in the Rockefeller Hospital was about 100 days. The shortest period was fifty days and the longest 254 days. Swift says that if general hospitals kept their patients with rheumatic fever for periods similar to this there would be only rheumatic fever patients in the wards during the winter and spring months. The question to be met is: "How can these patients be given proper periods of rest?" In this one point of proper provision for rest cure, the institutional and sanatorium treatment of tuberculosis has pointed a way. Perhaps the time may come when the tuberculosis problem will have been solved completely and these sanatoriums will be converted into hospitals for the treatment of patients with rheumatic hearts; but it is to be hoped that before that time provision for the proper care of a large group of these patients will have been made. A few heart hospitals in which proper study of these problems could be both intensively and extensively carried out would do much toward formulating a definite plan in the treatment of a condition which up to the present has been permanently benefited but little by the methods now in vogue.

Calcium Chlorid as Diuretic.—In cases of cardiac failure with edema in which constant rest in bed, digitalization and the administration of various diuretics have not resulted in a satisfactory diuresis, Segal and White have found that calcium chlorid may be employed as a diuretic. No deleterious effects were observed from the oral administration of calcium chlorid, from 10 to 15 gm. daily, in any of the cases studied. Crystalline calcium chlorid was administered in the form of a solution almost invariably, in 2.5 gm. doses, diluted in from 50 to 100 c.c. of water. In experiments on a normal person, doses of 5 gm. and 8 gm. each were taken. In the majority of cases the daily amount consisted of 15 gm., given in 6 doses of 2.5 gm. each at two-hour intervals. With the smaller doses the only handicap was the unpleasant taste of the drug; this may be avoided by giving the dry salt in capsules, each containing 0.5 gm. The larger doses of 5 and 8 gm. caused a burning sensation in the epigastrium which was readily relieved by the patient taking some food and less readily by drinking water. Diarrhea did not occur in any case; rather was there a tendency to constipation.

Value of Venesection in Treatment of Decompensated Heart.—The roentgenographic examination of a series of decompensated hearts in patients with failing circulation showed a diminution in the size of the heart immediately after venesection. When this occurred, Gordon says, there was a corresponding improvement in the condition of the patient. It is suggested that the hearts in these cases are more efficient in a moderately dilated form than when extremely dilated. In those cases in which no changes in the heart size occurred, it is believed that the muscle tone was so unresponsive to venesection, because of certain anatomic changes in the myocardium, that no improvement occurred in the circulation. A survey of the hospital records shows that numerous patients, bled as an emergency measure after other procedures of therapy, such as drugs, had failed, possibly because of their delayed action, responded favorably to venesection. It seems, therefore, that venesection has a place in improving the action of the decompensated heart and temporarily at least in removing signs and symptoms of failure.

Microcytosis in Hemolytic Icterus.—Whitcher has been studying the blood conditions before and after splenectomy in cases of hemolytic icterus. Three of these cases occurred in the same family, the mother and two small boys being affected. There was a return to a more normal blood picture and a very distinct improvement in the corpuscles after the operation. Therefore, because of the disappearance of the microcytes after splenectomy, in contrast to their abundance in the blood in hemolytic icterus before the operation, this feature may be regarded as a concomitant manifestation of the anemia of the disease, rather than an inherent character of the erythrocytes of the individual.

Magnesium and Calcium in Blood of Tuberculous Patients.—In normal and tuberculous persons, a variation of the magnesium content of the blood plasma was found by Schoenheit between 0.018 to 0.026 mg. per cubic centimeter and 0.031 and 0.038 mg. in the whole blood. No connection with the pathologic condition or the age, stature and body weight was found. The calcium values in the blood plasma of normal persons, determined after ashing it, proved similar to the values found by others, using a similar method, but were found considerably less in the blood plasma of tuberculous patients.

Focal Infections Cause Eczema.—Five cases of eczema apparently caused by focal infection are reported by Visher. In three cases, recovery followed the removal of abscessed teeth. In the fourth patient, the eczema ran its course concurrently with an acute pharyngitis. In the fifth case, rapid subsidence of the eruption accompanied improvement of infected pelvic viscera. Careful search was made in each case for other possible causes of the skin lesions, but none were found. Local antipruritic treatment in four cases had no effect on the skin lesions, aside from decreasing the scratching, and improvement seemed to occur in spite of rather than because of it.

Pancreas Preparations Increase Digestive Power of Duodenal Enzymes.—The results presented by Silverman et al. are interpreted as furnishing experimental proof of the fact that pancreatic preparations taken by mouth increase the digestive power of the duodenal contents.

Pharmacology of Sulphocyanates.—The alkaline sulphocyanates are stable, distinctive and biologically active substances, entirely different in their pharmacologic properties from the deadly prussic acid and cyanid group. In sufficient amounts they exert potent and distinctive pharmacologic properties, acting especially as intense spinal irritants, with lethal termination. Upward of 15 gm. might cause death in man. For therapeutic use, sodium sulphocyanate, in doses of up to 1 gm. daily (5 grains three times a day), Nichols says has been found markedly effective in reducing arterial hypertension.

American Journal of Physiology, Baltimore

74: 497-714 (Nov.) 1925

*Site of Formation of Bilirubin. F. C. Mann, C. Sheard, J. L. Bollman and E. J. Baldes, Rochester, Minn.—p. 497.
*Physiologic Action of Light. II. Depression of Arterial Blood Pressure. C. I. Reed, Chicago.—p. 511.
*Id. III. Effects on Arterial Blood Pressure of Direct Irradiation of Blood in Vivo. C. I. Reed, Chicago.—p. 518.
*Id. IV. Effects on Blood of Irradiation in Vivo. C. I. Reed, Chicago. —p. 525.
*Irradiation of Chicks with Cod Liver Oil. C. W. Carrick, Lafayette, Ind.—p. 534.
Ultrafiltration and Electrodialysis of Insulin Solutions. T. C. Taylor, C. E. Braun and E. L. Scott, New York.—p. 539.
Changes in Protoplasm of Nereis Eggs Induced by β-Radiation. A. Forbes and C. Thacher, Boston.—p. 567.
Presence of Insulin in Desiccated Beef Pancreas. V. Ross, Bloomfield, N. J.—p. 579.
*Regulation of Flow of Bile. G. E. Burget, Portland, Ore.—p. 583.
*Cause of Death from Anoxemia. A. E. Koehler, H. M. F. Behneman, O. E. Benell and A. S. Loevenhart, Madison, Wis.—p. 590.
*Physiology of Gastric Secretion. III. An Attempt to Prove That Humoral Mechanism is Concerned in Gastric Secretion by Blood Transfusion and Cross Circulation. A. C. Ivy, R. K. S. Lim and J. E. McCarthy, Chicago.—p. 616.
*Id. VIII. Proof of Humoral Mechanism. A. C. Ivy and J. I. Farrell, Chicago.—p. 639.
Effect of Auto Condensation and High Frequency Electric Current on Tonus of Skeletal Muscle. W. W. Tuttle and E. Williams, Urbana, Ill.—p. 650.
Study of Response to Continuous Intravenous Injection of Large Amounts of Glucose. J. D. Boyd, H. M. Hines and C. E. Leese, Iowa City.—p. 656.
*Distribution of Vitamin B in Maize Kernel. H. M. Croll and L. B. Mendel, New Haven, Conn.—p. 674.
Effect of Insulin on Morphologic Blood Picture; Relation of Diet to Convulsions Induced by Insulin. V. E. Levine and J. J. Kolars, Omaha.—p. 695.

Site of Formation of Bilirubin.—A comparison of the bilirubin content, as measured by the spectrophotometer, was made by Mann et al. of the arterial and venous blood of most of the large organs of the body and other isolated vascular areas. In most of the vascular areas, the bilirubin content of the venous blood was greater than that of the arterial blood of the spleen and bone marrow, which is said to prove that bilirubin is formed in the spleen and bone marrow.

Effect of Light on Arterial Blood Pressure.—Reed found that a beam of light of approximately 100 f. c. intensity, when directed into one or both eyes of a dog under ether anesthesia will cause a pronounced depression of arterial blood pressure. A beam of light from a carbon arc employed in the same manner and giving a total intensity of 1,250 f. c. will produce a more profound depression of blood pressure. More intense light does not produce a change of proportionate magnitude but induces the same degree of change somewhat more rapidly. This effect is not wholly due to nervous factors since bilateral vagisection and section of the optic nerve do not abolish or prevent the effect, although the latter operation does modify it considerably. No positive evidence was obtained that photochemical decomposition liberated any depressor substance into the blood stream. Short ultraviolet rays were not present in either of the two sources of light employed.

Effect of Irradiation of Blood on Blood Pressure.—Reed states that direct irradiation of blood circulating through a quartz tube interposed in an artery will cause a massive depression of general arterial blood pressure. Animals sometimes die from the shock even when anesthesia has been discontinued. This result may be obtained in irradiation with a carbon arc rich in ultraviolet or with a spectrum from which infra red rays have been filtered (longer than 7,000 Angström units) or ultraviolet rays below 3,300 Angström units. The differences between results obtained with these three spectrums are not pronounced.

Effects of Irradiation on Blood.—A beam of light of approximately 4,000 f. c. intensity projected from the positive electrode of a carbon tungsten arc lamp operated on a 110 volt direct current circuit at 4 amperes and condensed through a quartz lens was directed by Reed on a quartz tube interposed in the carotid artery so that the blood flowing through the tube was irradiated directly. Minor changes in hemoglobin percentage and in erythrocyte count occurred in both irradiated and control dogs to about the same degree so that it is probable that the increase was due to concentration of the blood. There was an absolute leukopenia, a lymphopenia but a relative lymphocytosis. The changes were not due to the anesthetic or to shifting of leukocytes. All available evidence indicates that photodynamic effects are, biologically, stimulators of oxidation; and it is suggested that rays constitute one means of accelerating metabolism, which may, however, proceed to a degree of intensity that is destructive.

Irradiation with Cod Liver Oil.—Carrick was able to show experimentally that the antirachitic substance in cod liver oil can be transmitted externally to young chickens by means of irradiation with cod liver oil in pyrex flasks. The results obtained present further evidence that the antirachitic substance in cod liver oil is some form of ultraviolet energy.

Regulation of Flow of Bile.—Burget is of the opinion that the function of the sphincter of Oddi has been overemphasized and not enough attention has been given to the tonicity of the intestine in attempting to measure the resistance of this sphincter. His study favors the hypothesis that bile flow is regulated by intra-abdominal pressure and tonicity and peristalsis of the duodenum, rather than being dependent on a reciprocal activity between the gallbladder and the sphincter of Oddi.

Cause of Death from Anoxemia.—Koehler and his associates conclude that decreased oxidation induces a vicious circle in that it causes acidosis, and the acidosis further interferes with the power of the tissues to use oxygen. Death then occurs.

Humoral Mechanism in Gastric Secretion.—An attempt is made by Ivy, Lim and McCarthy to prove that a humoral mechanism is concerned in gastric secretion by blood transfusion and cross circulation.

Humoral Mechanism in Genesis of Gastric Secretion.—Ivy and Farrell present evidence obtained by use of a new procedure for the study of gastric physiology; namely, the subcutaneous transplantation of a gastric pouch. The transplanted pouch does not show appreciable fluctuations in the continuous secretion. This secretion never contains free acid and only a small amount of total acid. Such a pouch secretes a gastric juice containing acid after a meal and after histamin and gastrin administered subcutaneously. The evidence presented shows decisively that a humoral mechanism is one of the mechanisms concerned in the genesis of gastric secretion. The evidence does not prove or disprove a hormone hypothesis. Various possible factors that might be involved in the humoral mechanism of secretion of the pouch are mentioned and discussed.

Vitamin B in Maize Kernel.—The discovery that vitamin B is not confined to any one part of the wheat kernel, but is distributed throughout the entire grain, has called for comparative investigations of other cereals. An attempt was made by Croll and Mendel to determine the mode of distribution of vitamin B in the structural parts of the maize kernel. Methods were devised for separation of the maize kernel into its structural parts. Feeding experiments with portions of the yellow maize kernel showed that practically all of the vitamin B of the whole grain is found in the embryo. The endosperm contains practically no vitamin B, while the bran includes an extremely small amount, if any, of this factor.

Arkansas Medical Society Journal, Little Rock

22: 125-150 (Nov.) 1925

Use of Chlorin Gas in Treatment of Infections of Respiratory Tract. R. H. R. Mann, Texarkana.—p. 125.
Common Colds. T. Douglass, Ozark.—p. 129.
Intestinal Obstruction. A. B. Carney, Fort Smith.—p. 134.

Endocrinology, Los Angeles

9: 353-440 (Sept-Oct) 1925

*Precocious Menstruation: Two Cases of Pubertas Praecox. H Wheelon, Seattle.—p. 353.
*Thyroid Studies. I Distribution of Goiter Among Indians. H P. Rush and L T. Jones, Portland, Ore.—p. 372.
*Case of Tetania Parathyreopriva Treated with Collip's Parathyroid Extract. H. Lesser and H. C. Shepardson, San Francisco.—p. 383.
*Hypopituitarism and Diabetes. H. J. Johns, Cleveland.—p. 397.
*Studies on Vigor. VI. The Effect of Starvation on Spontaneous Activity of Castrated Rats. R. G Hoskins, Columbus, Ohio.—p. 403.
Effect of Epinephrin on Strips of Excised Pregnant Human Uterus. C M. Gruber, St Louis.—p. 407.
Oestrous Cycle in Rat. I Effect of Thyroidectomy. M O Lee, Columbus, Ohio.—p. 410.

Precocious Menstruation.—In two cases of precocious menstruation presented by Wheelon, no definite causative factor for the appearance of the phenomenon was evident. Early menstruation (at 9 years), as evidenced by the second case presented, may occur independent of demonstrable gross pathologic change of the ovaries

Goiter Incidence Among Indians.—Goiter is present among the Indians and the incidence of distribution is, according to Rush and Jones, for the most part, parallel to the distribution among the white population. The greatest exception is noticed in the Pacific Northwest, where the natural Indian diet contains more iodin (salmon) than does the white man's diet. Goiter is increasing among the Indians, and this increase seems to be explainable by two factors, iodin deficiency and toxic influences on the organism. These results seem to offer further support of the work by Marine and his co-workers and McClendon.

Tetania Parathyreopriva Treated with Parathyroid Extract.—The case reported by Lesser is said to be the first detailed record of tetany in a human being resulting from accidental parathyroid extirpation in which Collip's parathyroid extract was used. A woman, aged 30, was operated on for a large adenomatous goiter. The mass extended under the sternum and posteriorly behind the trachea. Three parathyroid glands were accidentally removed. The status of the fourth parathyroid gland is unknown. The patient promptly developed tetania parathyreopriva. Treatment consisted of the administration of Collip's parathyroid extract. No calcium was administered during the first three weeks, except for 1 gm of calcium lactate, by mouth, prior to the beginning of parathyroid injections, and the patient was kept on a regular ward diet. The effect of the parathyroid extract on the subjective symptoms, objective findings and blood serum calcium was evidenced promptly. This new parathyroid hormone seems to be a true specific for parathyroid tetany.

Hypopituitarism and Diabetes.—Among the five cases reported by Johns, each of which showed clinical signs of hypopituitarism, one showed diabetes definitely, one a mild type of diabetes, and three patients were in a prediabetic state. There was decreased carbohydrate tolerance in all five of these cases in spite of the fact that, theoretically, because of the hypopituitarism, there should be an increased tolerance for carbohydrates. The observations reported confirm von Noorden's statement, but unfortunately give no information regarding the etiology of diabetes. Johns cannot but feel that the diabetes which is present in hypopituitary disorders is merely a coincidence—that the hypopituitarism has nothing whatever to do with it. These patients may be born with a hypo-insulogenic function; and thus if they happen to strain this weakened function by overeating, which seems to have happened in all these cases, for all showed marked obesity, there is nothing to stop them from breaking down completely the already impaired insulogenic function unless the danger is discovered early and the downward progress arrested. These cases are of interest, however, in that they serve to emphasize the danger of accepting any apparent physiologic rule as a final, all-inclusive dictum.

Effect of Starvation on Activity.—Ten castrated rats were subjected by Hoskins to four or six days' starvation. Their spontaneous activity as registered by the revolving cage method was augmented about 200 per cent. In four cases the increased activity persisted for several days after full feeding was resumed, whereas in three a depression, probably due to resulting physical debility, ensued.

Effect of Epinephrin on Uterus.—The effect of epinephrin was studied by Gruber on strips taken at the time of cesarean section from three pregnant human uteri. In each case the results confirm the findings of previous investigators in that it increased the tonus of the muscle

Journal of Biological Chemistry, Baltimore

65: 555-818 (Oct) 1925

*Sugar Content of Blood. B K Harned, Memphis, Tenn.—p. 555.
Method for Determination of Total Sulphates in Tissues. W Denis and S Leche, New Orleans.—p. 561.
Distribution of Injected Sulphates in Tissues. W. Denis and S Leche, New Orleans.—p. 565.
*Is Antirachitic Factor of Cod Liver Oil, When Mixed with Ground Grains, Destroyed Through Storage? E B. Hart, H Steenbock and S Lepkovsky, Madison, Wis.—p. 571.
Nutritional Requirement of Chicken. V Influence of Ultraviolet Light on Production, Hatchability and Fertility of Egg. E B Hart, H Steenbock, S. Lepkovsky, S W. F. Kletzien, J G Halpin and O N Johnson, Madison, Wis.—p. 579.
Acid and Base Forming Elements in Foods. G W Clark, Berkeley, Calif.—p. 597.
Chemical Properties of Insulin. D A Scott, Toronto, Canada.—p. 601.
*Urea Test of Renal Efficiency. I M Rabinowitch, Montreal, Canada.—p. 617.
*Isolation from Blood of Hitherto Unknown Substance Bearing on Present Methods for Estimation of Uric Acid. G Hunter and B A Eagles, Toronto, Canada.—p. 623.
Influence of Sunlight on Bone Development in Swine. L A Maynard, S. A. Goldberg and R. C Miller, Ithaca, N. Y.—p. 643.
Nitrogenous Constituents of Juice of Alfalfa Plant. H B Vickery, New Haven, Conn.—p. 657.
Energy Expenditure of Women During Horizontal Walking at Different Speeds. H M Smith and D. B Doolittle, Cambridge, Mass.—p. 665.
Colorimetric p_H Test of Water or Unbuffered Solutions. H T Stern, Bloomfield, Conn.—p. 677.
Mucoproteins of Snails Helix Aspersa and Helix Pomatia. P A Levene, New York.—p. 683.
Gas and Electrolyte Equilibria in Blood. VIII Distribution of Hydrogen, Chlorid and Bicarbonate Ions in Oxygenated and Reduced Blood. D. D. Van Slyke, A B. Hastings, C D. Murray and J Sendroy, Jr, New York.—p. 701.
Influence of Protein Concentration on Conductivity of Human Serum. D W. Atchley and E. G Nichols, New York.—p. 729.
Micro Method for Determination of Base in Blood and Serum, Other Biological Materials. W C Stadie and E C Ross, Philadelphia.—p. 735.
*Changes in Composition of Urine After Muscular Exercise. D W Wilson, W L Long, H C. Thompson and S Thurlow, Philadelphia.—p. 755.
*Excretion of Lactic Acid in Urine After Muscular Exercise. S H Liljestrand and D W. Wilson, Philadelphia.—p. 773.
*Influence of Orally Administered Calcium Salts on Serum Calcium of Normal and Thyreoparathyreoprivic Dogs. A M Hjort, Detroit.—p. 783.

Sugar Content of Blood.—The Folin-Wu reactions for blood sugar have been applied by Harned to blood filtrates from mercuric nitrate precipitation. Such filtrates contain nitrogen only in the form of nitrate, and are thus free of many, if not all, of the interfering, nonsugar blood components. The Folin-Wu values for blood sugar average from 17 to 25 per cent higher than those found by the modified procedure. The results are in accord with those given by the new Benedict method for blood sugar.

Antirachitic Power of Cod Liver Oil.—Hart and his associates assert that cod liver oil mixed with ground grains and stored in cans at room temperature retained its calcifying power for at least six months.

Urea Test of Renal Efficiency.—When urea was administered by mouth to normal individuals, previously *restricted from fluids* for at least twelve hours, and tests showing polyuric responses, above the rate equal to the minimum value of the "augmentation limit" (2.5 liters per twenty-four hours), were discarded, Rabinowitch says that the coefficient of variation in the case of the factor was practically identical with that of the constant. Under the same set of conditions a parallelism was noted also between the values of the factor and constant in forty cases of albuminuria. Since *urine volume output is essential in calculating the constant* and is not taken into consideration in the calculation of the factor, and in view of the foregoing observations, its effect on urea excretion is practically negligible under the set of conditions described. Excretory ability of the kidneys thus appears to be the predominant factor influencing the value of the ratio U/B. The ratio has, therefore, a sound basis as a test of renal efficiency.

Pyrimidin Nucleosid Isolated from Blood.—A new substance of the empiric formula $C_8H_{11}N_2O_3$, believed to be a *simple pyrimidin nucleosid, has been isolated by Hunter and* Eagles from pig's blood, and evidence has been given of its presence in other animal bloods as well as in human blood. It is commonly present in human whole blood to the extent of from 10 to 12 mg. per hundred cubic centimeters, and, as it is confined entirely to the corpuscles, it is there in approximately twice these concentrations. The amount in blood varies over a wide range even in the same individual. The behavior of the new substance has been quantitatively studied with the old and new uric acid reagents, and the conclusion has been reached that the discrepancies between the direct method of Benedict and the precipitation method of Folin and Wu for the estimation of uric acid in human blood are due to the fact that this new substance adds to the values obtained for uric acid by the direct method. The substance is that mainly responsible for the direct "uric acid" values recently obtained in animal bloods by Bulmer, Eagles and Hunter, and is separable from uric acid in blood filtrates by the precipitation method of Folin and Wu.

Effect of Exercise on Composition of Urine.—The effect of short periods of strenuous exercise on the composition of the urine was studied by Wilson and his associates. There were observed, following exercise, a decrease in urine volume, and an increase in hydrogen ion concentration, and acid and ammonia excretion. The elimination of phosphates rose while that of chlorids fell. Each of these changes reached its maximum within from twenty to thirty minutes and was followed by normal values within from forty to ninety minutes after one or two minutes of exercise.

Effect of Exercise on Lactic Acid Excretion of Urine.—The excretion of lactic acid in urine after from two to three minutes of strenuous exercise was studied by Liljestrand and Wilson. The excretion reached maxima varying from 86 to 630 mg. during the second ten minute period after exercise. Thereafter, the elimination diminished and normal values were reached in from thirty to fifty minutes. The total quantity of lactic acid excreted after one period of exercise varied from 140 to 1,370 mg. A second period of exercise following shortly after the first yielded similar quantities. The lactic acid was shown to be the dextro form.

Effect of Ingested Calcium on Blood Calcium.—Hjort found that calcium salts, such as the lactate, chlorid and glycerophosphate, when administered orally in amounts containing a calcium equivalent of 0.2727 gm. of the oxid per kilogram of body weight, are absorbed rapidly enough to increase definitely the serum calcium level in dogs, whereas the relatively insoluble salts, such as the carbonate, in like quantity, are inconstant in this respect. Calcium salts, such as the lactate, when ingested in quantities with a calcium equivalent of less than 0.2727 gm. of the oxid per kilogram of body weight, simulate the less soluble salts in their effect on the serum calcium of dogs, for an *increase is then inconstant. Calcium* lactate is preferable to the chlorid, even though it must be given in greater bulk, for it is less irritating to the gastric mucosa. Calcium salts control tetany by increasing the blood calcium level of parathyreoprivic dogs.

Journal of Cancer Research, Lancaster, Pa.

9: 287-424 (Sept.) 1925

*No Immunity Produced by Inoculating Irradiated Tumor Tissue. F C. Wood and R. E. Prigosen, New York.—p. 287.

*Biologic Resistance to Malignant Tumors. I. Determination of "Rad" Dose of Roentgen Ray for Sarcoma Cells (Crocker Rat Sarcoma No. 10) Exposed in Vitro. J. L. Weatherwax, E. T. Leddy and H. H. Morris, Philadelphia.—p. 298.

*Id. II. Effect of Roentgen Rays on Antigenic Specificity of Certain Proteins Exposed in Vitro. C. H. Ling, Philadelphia.—p. 305.

*Id. III. Effect of Single Injection of Irradiated Sarcoma Cells on Growth of Established Homologous Tumor Grafts. J. C. Small, M. J. Evans and E. B. Krumbhaar, Philadelphia.—p. 316.

*Id. IV. Effect of Multiple Injections of Irradiated Sarcoma Cells on Growth of Established Homologous Tumor Grafts. J. C. Small, M J. Evans and E. B. Krumbhaar, Philadelphia.—p. 323.

*Leukemia, Pseudoleukemia and Related Conditions in Slye Stock of Mice. J. P. Simonds, Chicago.—p 329.

Effect of Unfiltered Rays of Radium on Chick Embryo Heart Tissue Cultured in Vitro. H. B. Goodrich and J. A. Scott.—p. 374.

*Autoplastic Implantation of Tar Tumors as Compared to Their Histologic Picture. L. Kreyberg, Bergen, Norway.—p. 381.

Sarcoma of Heart in Guinea-Pig. L. Bender, Iowa City.—p. 384.

Measurements of Electrical Capacity of Benign and Malignant Tumors—Clinical Significance. G. W. Crile, Cleveland.—p. 388.

*Relation of Pregnancy to Carcinoma of Uterus. W. A. O'Brien, Minneapolis.—p. 391.

*Ultraviolet Absorption Spectra of Blood Serums in Relation to Infectious Diseases and Cancer. W. Stenstrom and M. Reinhard, Buffalo. —p. 394.

*Lessons Learned from Failures in Roentgen-Ray Treatment of Cutaneous Cancer. H. H. Hazen, Washington, D. C.—p. 404.

*Insulin Content of Tumor Tissue. G. T. Cori, Buffalo.—p. 408.

*Probable Existence of Calendar Rhythm in Origin of Spontaneous Mammary Tumors in Mice. M. C. Marsh, Buffalo.—p. 411.

Relation of Certain Endocrines to Salt Content of Rat Blood. G. L. Rohdenburg and O. F. Krehbiel, New York.—p. 422.

Irradiated Tumor Tissue Not Immunity Producing.—Data, culled by Wood and Prigosen from about 6,000 experimental inoculations and more than 30,000 control stock inoculations, furnish considerable evidence against the assumptions that either immunity to inoculation, or resistance to a growing mouse or rat tumor, can be induced by the inoculation of irradiated tumor material. If no such immunity can be produced in animals, the authors state, the experimentation on human beings should be abandoned immediately as not only useless but also as dangerous and wholly unjustifiable from a scientific point of view.

Lethal Dose of Roentgen Ray for Rat Sarcoma.—A method for the determination of the lethal dose of roentgen-ray irradiation for the cells of rat sarcoma 10 (Crocker Institute) is described by Weatherwax, Leddy and Morris. It appears to be about 75 per cent. of the "Rad" dose described by Chambers, Scott and Russ for Jensen's rat sarcoma.

Antigenic Specificity of Proteins Not Affected by Irradiation.—The proteins, represented by *B. typhosus*, by horse *serum and by sheep erythrocytes when exposed in vitro to* large doses of unfiltered roentgen rays, Ling found, do not lose their antigenic specificity as tested by the production of immune serums in rabbits. Agglutinins, precipitins and hemolysins produced by irradiated antigens appear identical with those produced by the nonirradiated antigens in each instance.

Effect of Injection of Irradiated Sarcoma Cells on Tumor Growth.—The growth of established tumors (rat sarcoma 10) was not affected by a single injection of homologous tumor cells devitalized by roentgen-ray irradiation under the conditions of the experiments made by Small, Evans and Krumbhaar. They are convinced that the success of this method in other hands emphasizes the need for repeating the experiments with large numbers of animals and with other types of experimental tumors.

Id.—The growth of established tumor grafts of rat sarcoma 10 was not affected by three injections at weekly intervals of homologous tumor cells devitalized by roentgen-ray irradiation under the conditions of the authors' experiments. The hypothetic biphasic action of antigens of this type requires further investigation in that it might have a bearing on the interpretation of failure to establish some degree of immunity in animals following the injection of devitalized tumor cells.

Leukemia and Pseudoleukemia Among Mice.—Among the 316 mice in the first 15,000 necropsies of the Slye stock, studied by Simonds because they showed enlargements of the lymph glands and spleen, there were found sixty-seven leukemias, of which twenty-eight were of the lymphatic, and thirty-nine of the myelogenous type; 111 pseudoleukemias, and fifty-one lymphosarcomas. Borderline or transition cases are numerous. A generalized lymphosarcoma may closely resemble a *pseudoleukemia; a subleukemic pseudoleukemia is not easily* differentiated from a true leukemia; a leukosarcoma partakes of the characteristics of both leukemia and lymphosarcoma, in some cases of pseudoleukemia, the lesion in one lymph gland or one group of glands may be so extremely invasive as to resemble a lymphosarcoma. An attempt has been made to establish criteria whereby these difficult cases may be classified correctly. Lymphoid hyperplasia may be either local or generalized. This condition differs from the diseases mentioned above chiefly in the absence of the quality of invasiveness. Anatomically and histologically, leukemia, pseudoleukemia and lymphosarcoma in these mice have distinctive features which indicate that they are probably fundamentally of the same nature and probably belong among the true neoplasms.

Autoplastic Implantation of Tar Tumors.—Ten autoplastic inoculations made by Kreyberg of tumors of histologically innocent appearance were all negative. Two autoplastic inoculations of tumors of histologically dubious appearance were negative. Ten out of thirteen autoplastic inoculations of tumors histologically malignant were positive. In these experiments a complete parallelism was found between the growth of the autoplasts and the histologic structure. It has not been possible to find any difference between the biologic and the histologic qualities of tumors tested.

Relation of Pregnancy to Carcinoma of Uterus.—The relative proportion of women in the cancer age who have borne children was investigated by O'Brien. At the time of life in which carcinoma of the cervix uteri is most common, only 9.16 per cent. of women had not been married. One statistical study showed that, of the women in the second decade of married life, only 7.4 per cent. had never been pregnant. While no definite conclusions can be drawn from these statistics as to whether carcinoma of the cervix uteri is dependent on pregnancy, they indicate that among those who have reached the cancer age parous women greatly predominate.

Ultraviolet Absorption Spectrums of Cancer Blood.—Stenstrom and Reinhard assert that blood serum of animals and human beings shows absorption bands in the ultraviolet part of the spectrum. Blood serums from cancer patients were examined and showed a slight variation among themselves. However, no definite difference was discovered between normal persons and cancer patients. There was not a marked difference in the absorption spectra between serums taken before and immediately after roentgen-ray irradiation or between the absorption spectra taken before and after the serums had been irradiated in a test tube with a moderate dose of roentgen rays.

Roentgenotherapy of Skin Cancer.—Hazen is of the opinion that a consideration of the facts observed would seem to indicate that the usual doses of the roentgen rays do not directly kill the cancer cells, but stimulate certain defensive reactions in the tissue. One of the defensive mechanisms is a local reaction, but there is good reason to believe that there may likewise be some general process of immunity concerning whose nature we are still ignorant. From the practical standpoint, preoperative irradiation has a scientific basis. When cutaneous neoplasms are treated by either the roentgen rays or radium, care should be taken that there is a fairly wide margin of normal tissue exposed in order that the defensive reaction may be established. Cancer invading cartilage or scar tissue cannot be dealt with satisfactorily by irradiation.

Insulin Content of Tumor Tissue.—Extracts prepared by Cori from malignant and benign tumors, according to the method of Doisy, Somogyi and Shaffer, contained only traces of insulin.

Calendar Rhythm in Spontaneous Mammary Tumors of Mice.—Marsh found that data based on 159 tumor mice furnish strong evidence that spontaneous mammary tumors of mice reach the earliest palpable size more often in some calendar months than in others.

Journal of Urology, Baltimore

14: 429-569 (Nov.) 1925

*Comparative Study of Value of Stained Smears and Cultures in Diagnosis of Gonorrheal Vulvovaginitis. S. A. Scudder, Boston.—p. 429.
Destructive Lesions of Female Urethra in Childhood: Differential Diagnosis from Female Hypospadias. A. B. Cecil, Los Angeles.—p. 441.
*Application of Creatinin Kidney Function Test. N. F. Ockerblad, Kansas City, Kan.—p. 477.
Difficulty in Distinguishing Between Radiographic Appearance of Urinary Stones and Calcified Abdominal Glands. A. L. Chute, Boston.—p. 489.
*Bilateral Renal Lithiasis. G. J. Thomas, Minneapolis.—p. 501.
Management of Bladder Tumors, Particularly the Inoperable Type. E. C. Watson, Buffalo.—p. 509.
Radium and Roentgen Ray in Treatment of Sarcoma of Prostate. H. C. Bumpus, Jr., Rochester, Minn.—p. 519.
*Sodium Thiosulphate in Mercuric Chlorid Poisoning. E. Hess and A. F. Massaro, Erie, Pa.—p. 539.
Suprapubic Drainage Preliminary to Punch Operation in Selected Cases. H. G. Bugbee, New York.—p. 549.
Cases of Retention of Urine Due to Posterior Urethral Valve and Cyst of Prostate. E. L. Keyes, New York.—p. 553.
Anesthesia for Minor Urologic Operations. S. W. Moorhead, Philadelphia.—p. 557.

Diagnosis of Gonorrheal Vulvovaginitis.—The diagnosis in cases of vulvovaginitis, in Scudder's opinion, should depend on smears and cultures from the urethra, vulva, vaginal introitus, upper vagina and cervix. In thirty cases of gonorrheal vulvovaginitis, no gram-negative diplococcus was found that should be confused with the gonococcus, either morphologically or culturally. In eighteen negative cases, used as controls, no organism was found that could be classed as *Micrococcus catarrhalis*. The smear is still the most reliable criterion of gonorrheal infection, but cultural results will be consistently positive if the material is obtained during the acute stage of the disease.

Creatinin Kidney Function Test.—The fact that creatinin is an end-product of chemical processes in the body and suffers no further chemical reduction in the body, nor, as far as is known, is it stored up by any organ or tissue, but is normally separated from the blood stream and excreted by the kidney, Ockerblad asserts, makes it an ideal substance for use as a test of renal function. A persistent depressed curve is a warning that the kidney is damaged beyond recovery. With the aid of this test one can get information regarding the functional ability of the kidney when the phenolsulphonephthalein test is silent. As a test for use in urology when precise information is required in a short space of time, it is unexcelled.

Bilateral Renal Lithiasis.—Thomas asserts that in infants and children 6 per cent. of renal stones are bilateral. In adults, 12 per cent. of renal stones are bilateral. Bilateral renal stones are multiple in 66 per cent. of cases. Large stones may be present in both kidney pelves without producing symptoms. Renal stones which may be silent in one or both kidneys should be thought of in all infants or children who have pus in the urine. A complete urologic study should be made of infants and children having pus in the urine. This must include a roentgenogram of the entire urinary tract. Bilateral renal stones, when multiple or when large, rarely indicate operation unless an emergency exists. Multiple recurrence is the rule.

Sodium Thiosulphate in Mercuric Chlorid Poisoning.—Hess and Massaro have been able to take a rabbit and give it a lethal dose of mercuric chlorid and then administer sodium thiosulphate, a gram per kilogram of body weight, and save the rabbit's life. Attention is called to the fact that, even with mercuric chlorid and sodium thiosulphate for two doses, the blood urea increases very rapidly and then gradually diminishes to normal.

Philippine Islands Medical Association Journal, Manila

5: *289-318* (Oct.) *1925*

*Splenectomy in Splenomegaly. P. Guazon.—p. 289.
Osteosarcoma of Tibia in Girl, Aged 13, with Probable Metastasis in Left Lung and Pleura. C. Reyes.—p. 293.
Common Ventricular Opening for Aorta and Pulmonary Artery. J. Z. S. Cruz.—p. 295.
Need for Accurate Morbidity and Mortality Statistics. R. G. Padua.—p. 301.

Splenectomy in Splenomegaly.—In Guazon's series of twenty-one cases, twelve patients recovered completely, one improved, and eight died. The cause of death in four of these cases can be ascribed directly to the operation, because of hemorrhage, but the other four patients would have been saved had not complications occurred several days after the operation. These patients were all very poor surgical subjects, on account of great impairment of health. Malarial infection seems to be an important factor in the causation of splenomegaly in the islands. In Guazon's series, fifteen patients gave the history of having suffered from malaria. In two cases the malarial parasites (tertian type) appeared in the peripheral blood after the removal of the spleen. According to the pathologic data, the presence of organic changes in the liver, heart, lungs and kidneys resulted in death Splenectomy in one case of myelogenous leukemia proved fatal. Guazon is convinced that in selected cases of splenomegaly there is no doubt that the operation will bring about improvement in the general condition of the patient.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted

Brain, London

48: 279 448 (Sept) 1925

*Hepatolenticular Degeneration S. Barnes and E W. Hurst —p 279
Central Tracts of Nervus Vestibularis I H Jones and W. G Spiller —p 334
Relations of Corpus Striatum and Pallium in Varanus; Their Bearing on Birds, Mammals and Man W. Herman —p 362
Nerve Endings in Panniculus Carnosus of Hedgehog; Sympathetic Innervation of Striated Muscle H. S. D. Garven —p 380.

Hepatolenticular Degeneration.—Barnes and Hurst contend that Wilson's "progressive lenticular degeneration," Gowers' "tetanoid chorea," certain cases of "pseudosclerosis" and Thomalla's "torsion spasm" should be grouped together as forms of "hepato-lenticular degeneration" The nervous symptoms of this disease never occur until the liver has been grossly damaged The hepatic cirrhosis seen at postmortem is an end-result of a series of attacks of acute hepatitis The toxin causing the hepatitis is not manganese. It probably has a bacterial origin in the alimentary canal. The variation in clinical nervous symptoms depends partly on which regions of the lenticular nuclei are mainly damaged, and partly on the degree to which damage is done to other nervous structures

Indian Medical Gazette, Calcutta

60: 455 506 (Oct) 1925

Acute Inflammations of Prostate H Smith —p 455
Asepsis H. Halliday —p 455
*Staphylococcal Kidney in Childhood E. H. V Hodge —p 459
Transmission and Etiology of Dengue A. C Chandler.—p. 460
Soil Acidity and Survival of Hookworm Larvae A C Chandler —p 462
Toxic Symptoms of Organic Arsenic A D White and R S S C Dutt —p 464
Stibosan (Von Heyden "471") L E Napier —p 466
Izal in Cholera L Ganguly.—p 467
Lichen Spinulous G Panja —p 467
*Fungo Spirochetal Affections of Respiratory Passages S N. Mathur and M Zutschi.—p 468
Results of Autopsies Held at Calcutta Police Morgue During *1923 1924* in Cases of Sudden Death C. A. Godson —p 469.
Case of Echis Carinatus Poisoning. F. Wall —p 470.
Fatal Case of Snake Bite (Echis Carinatus) During Pregnancy S A S C. Singh.—p. 471
Case of Cobra Bite Successfully Treated with Fitz Simson's Polyvalent Antivenomous Serum A C Shradwaja —p 472
Effect of Insect Bite P S Mills —p 473
Case of Arsenical Intolerance Y. S Row —p 473
Id V. N. Deuskar —p 473
Case of Ovariotomy. R S C Nath —p 474
Case of Generalized Blastomycosis G Panja —p 475
Case of Melanoderma G. Panja.—p 476
Fatal Case of Snake-Bite (Echis Carinatus) C. Singh —p 477.
Case of Volvulus of Ileum. M. E Tiru Chelvum —p 478.
Case of Nevus. D. M Bhatavadekar —p 479
Accidental "Marking-Nut" Dermatitis R W Scanlan.—p 480.

Treatment of Kidney Infections in Childhood.—Hodge suggests that the kidneys in acute exanthems should be treated with antiseptics in the hope that their involvement may be averted The following mixture is recommended: hexamethylenamin, from 3 to 5 grains (0.2 to 0 3 gm); acid sodium phosphate, from 3 to 5 grains; sodium benzoate, 3 grains; quinin dihydrochlorid, ½ grain (0 03 gm.); water, ½ ounce (15 c.c.). This mixture should be given four times a day, four hourly, and once in the night if the patient is awake.

Fungus in Sputum.—While examining sputum for tubercle bacilli, Mathur and Zutshi found forms closely resembling *Monilia tropicalis* of Castellani, together with spirochetes, pneumococci and *Micrococcus catarrhalis*. In a few samples there were staphylococci, streptococci but seldom fusiform bacilli

Indian Medical Record, Calcutta

45: 305 336 (Oct) 1925

Infection and Immunity A Roy —p 305.
Kala Azar. P. N Gupta —p. 319.

Journal of Cancer, Dublin

2: 1-30 (Oct.) 1925

Cancer of Breast; Deep Roentgen-Ray Treatment W. Pilger.—p 1.
Deep Roentgen Ray Therapy; Importance of After Treatment. K. M Hunanandani.—p. 10.
Etiology of Heterogeneity of Cancer Tissue E O. Houda —p. 16
Localization of Brain Tumors by Ventriculography. J. W. Pierson —p 22

Journal of Laryngology and Otology, Edinburgh

40: 697 764 (Nov) 1925

Methods of Caring for Diseases of Pharynx, Larynx and Mouth C H Mayo —p. 697.
Evolutionary Factors in Production of Pharyngeal Diverticula. V. E Negus —p 702
Intranasal Dacryocystostomy. J S Fraser.—p 725.

Journal of Physiology, London

60: 347 478 (Oct. 31) 1925

*Tissue Oxygen Tension, Tetany and Convulsions J. A. Campbell —p 347
Secretion of Sweat and Vasodilatation Produced by Pilocarpin J H Burn.—p. 365
Rôle of Phosphates in Carbohydrate Metabolism in Skeletal Muscle F. Beattie and T. H. Milroy.—p 379
*Effect of Thyroid Feeding on Sugar Tolerance. H. P. Marks —p 40?
*Course of Blood of Renal Artery. J. N. Langley.—p 411.
Circulation in Skeletal Muscle, Chiefly in Relation to Effect of Depressor Nerve of Rabbit A Jarisch —p 419.
Influence of Temperature on Equilibrium Between Oxygen and Hemoglobin of Various Forms of Life I Macela and A Seliskar.—p 428
*Physiology of Spleen. J. Barcroft. H. A. Harris, D Orahovats and R Weiss —p 443.
Innervation of Smooth Muscle. III Splanchnic Effects on Lower End of Esophagus and Stomach of Cat H. O. Veach.—p 457.

Oxygen Tension and Tetany.—It is suggested by Campbell that tetany and convulsions are caused by oxygen deficiency in the nerve cells (brain, spinal cord), and the purpose of tetany and convulsions is to counteract this defect. Injection of water intravenously causes a fall of oxygen tension in the tissues, addition of small quantities of salt to the water causes a definite rise in oxygen tension.

Effect of Thyroid Feeding on Sugar Tolerance.—A secondary hyperglycemia was observed by Marks following the injection of glucose or of a small dose of insulin into the thyroid fed rabbit whose liver still contains glycogen. When the liver is depleted of glycogen, a small dose of insulin or an injection of glucose produces a fatal hypoglycemia. The bearing of these observations on the mechanism of blood-sugar regulation is discussed

Course of Blood in Renal Artery.—Langley's research shows that the renal artery supplies blood to the tissues of the hilum, the capsule and the surrounding fat, as originally described by Bowman. The supply to the capsule and the surrounding fat appears, however, to be partial and variable. The supply is by six or eight interlobular arteries which run through the cortex with little or no decrease in size. The renal artery also supplies blood to the ureter. The renal vein receives blood from the same areas.

Physiology of Spleen.—The view is put forward by Barcroft et al. that the spleen exercises a real function in adjusting the volume of circulating blood or, more correctly, circulating functional hemoglobin according to the needs of the animal

Medical Journal of Australia, Sydney

2: 443 470 (Oct 10) 1925

Plants, Including Fungi, Poisonous or Otherwise, Injurious to Man in Australia J B Cleland —p 443
Postoperative Psychosis G Brown —p 451
Aspects of Use of Physical Agents in Treatment in Medical Practice B J M. Harrison and F. J. Gwynne —p 453
Sarcoma of Orbit: Krönlein's Operation, Report of Case. G. Brookes —p 456
Acute Hemorrhage into Both Suprarenal Bodies, Case J S Kessell. —p 456

Quarterly Journal of Medicine, London

19: 1-112 (Oct.) 1925

*Intestinal Diverticula. E. I. Spriggs and O. A. Marxer.—p. 1.
*Relative Prevalence of So-Called Endocarditis Lenta Before and After War. G. M. Wauchope.—p. 35.
*Clinical Syndrome of Thrombosis of Coronary Arteries. J. W McNee.—p. 44.
*Excretion of Chlorids by Healthy and Diseased Kidney. O. L. V. de Wesselow.—p. 53.
Action of Belladonna and Neutral Fats on Acidity of Stomach Contents. W. M. Roberts.—p. 74.
*Sulphemoglobinemia. L. P. Garrod.—p. 86.
*Clinical Aspect of Bundle Branch Block. J. Cowan and J. C. Bramwell.—p. 95.

Intestinal Diverticula.—In 1,000 consecutive radiologic examinations of the alimentary canal, duodenal diverticula have been detected by Spriggs and Marxer thirty-eight times In thirty-two cases the diverticulum was single; in six, two or more diverticula were present. One patient had six duodenal diverticula as well as several in the jejunum. In all, fifty-one duodenal pouches were recognized in the thirty-eight patients concerned, one arising from the first part of the duodenum, thirty from the second, sixteen from the third, and four from the fourth part. Diverticula of the jejunum were observed in seven patients. In four of these there were also pouches in the duodenum. In the ileum seven diverticula were found (excluding Meckel's diverticulum). Diverticulosis of the appendix occurred six times. Diverticulosis of the large intestine was recognized in 100 patients. A prediverticular state can be recognized radiologically, characterized by fixity of the affected part of the bowel wall, with small irregularities. This is the first stage of the disease, at which the minute hernias begin to develop. The second stage of diverticulosis is one of formed diverticula. The third stage is termed diverticulitis. Inflammation has now spread from the pouches to the walls of the bowel and surrounding parts. It is suggested that diverticulosis is the result of either a degenerative or an inflammatory process. Its association with spondylitis of the lumbar spine, which was found in 70 per cent. of the diverticulosis patients as compared with 20 per cent. in a control series, might favor either view; but the inflammatory appearances of the prediverticular state and the association, nearly as frequent as that of spondylitis, with abscesses at the apexes of the teeth, also with other septic conditions in various parts of the body, favor an infective origin. The demonstration of the prediverticular state particularly, which has been observed in thirty-five patients, makes it improbable that diverticulosis is due to mere passive extrusions in a weak but otherwise healthy intestine. An explanation is offered for the greater frequency of diverticulosis in the loop of the pelvic colon.

Incidence of Endocarditis Lenta.—The series of 195 cases reviewed by Wauchope supports the view already put forward and demonstrated by others that the disease known as endocarditis lenta became much more common after the recent war; that service in the army predisposed in some way to the acquirement of the disease, and that in ex-soldiers it tended to be more chronic in type than in civilians and women, in whom both the incidence and the form of the disease remained unaffected by the war.

Symptoms of Thrombosis of Coronary Arteries.—In sudden thrombosis of large branches of coronary arteries McNee says there may occur, in patients who survive the immediate shock, a very remarkable clinical syndrome. The main clinical features are as follows: (*a*) agonizing pain, of varying distribution, which lasts much longer than in the usual attack of angina pectoris; (*b*) dyspnea, which may be extreme; (*c*) a peculiar color and appearance of the face; (*d*) immediate signs of acute cardiac failure—cardiac, pulmonary, hepatic, and renal; (*e*) one sign which is inconstant, but almost pathognomonic in association with a suggestive history or group of symptoms, is a localized pericardial friction rub; (*f*) fever and polymorphonuclear leukocytosis; (*g*) various abnormalities in the electrocardiogram. A great many difficulties in diagnosis may arise if the pain is localized to the upper part of the abdomen, and an acute abdominal disease may wrongly be suspected. The course and prognosis of this serious cardiac disease is very variable Many patients die at once or within a few weeks, but increasing experience in recognition of the condition has shown that some patients may survive in fair health for a number of years. The recognition of the clinical syndrome should be fairly easy in patients who have previously suffered from cardiac complaints such as angina pectoris. The real difficulties in diagnosis arise when the coronary occlusion is the first evidence of cardiac disease in a previously healthy patient.

Excretion of Chlorids by Kidney.—A method is described by de Wesselow by which the capacity of the kidney for chlorid concentrations may be examined, and which appears to give sufficiently constant results in the normal to be of value in clinical work. In interstitial azotemic nephritis the impairment of urea concentration and chlorid concentration run parallel. Nephritic patients showing edema appear to fall into two groups. In one of these groups, the plasma content in chlorid is low, while the edema fluid is rich in chlorids, and in these patients the edema is apparently of extrarenal origin. In the other group, the chlorid concentration is frequently good. It is suggested that in these patients defective water excretion is the underlying cause of the edema. It is doubtful whether true dissociation of the concentrating capacity of the kidney for urea and chlorid occurs. The causes of the variations met with in the percentage of chlorids present in the plasma of patients having interstitial nephritis are discussed.

Sulphemoglobinemia.—In two cases of sulphemoglobinemia reported by Garrod, the nitroso-bacillus was obtained in culture from the stools. Examination by the same technic of stools in other diseases failed to reveal the bacillus. The onset of this condition appears generally to be insidious but may occasionally be abrupt. The principal symptom in most patients was either shortness of breath (thirteen cases) or pain of an anginal nature (eight cases). Cardiac enlargement was well marked in fourteen cases. The superficial arteries were obviously diseased in five cases. There was definite hypertension in eleven cases and an associated valvular lesion in eleven cases. Auricular fibrillation was present in five cases, and complete auriculoventricular block in one case. The condition appears generally to be due to a secondary fibrosis of the heart muscle. If the lesion is localized, the prognosis is favorable, but if it is part of a widespread degenerative process the outlook is grave. The striking immunity of the left branch, which was involved in only one case in the series, is probably to be explained by its anatomic disposition and by its presence. Recovery in two instances took place during the administration in large doses of a vaccine prepared from the nitroso bacillus. After recovery no growth of the organism could be obtained from the stools, and substances immune to it were found in the blood serum of both patients.

After-History of Bundle Branch Block Cases.—Twenty-four cases, all of which presented a typical electrocardiogram of bundle branch block, have been studied by Cowan and Bramwell, and their after-histories followed up. Fourteen of the patients have died, ten within one year, and three others within eighteen months of coming under observation. Seven patients died of progressive heart failure with venous congestion, two of acute "heart attacks" and five from causes not directly connected with the heart. The remaining ten patients are alive at the present time. One has now been under observation for more than four years, and two for more than three years. Of these, seven are enjoying quite good health and are able to carry on a fairly active life. But in one only of these patients has there been any rich blood supply. The frequency of the condition has probably been underestimated, because of the fact that it can only be recognized by electrocardiographic methods. Its presence indicates a definite myocardial lesion, but if unaccompanied by signs of cardiac insufficiency is not necessarily of grave prognostic significance.

Tubercle, London

7: 57-104 (Nov.) 1925

Pulmonary Lesions Simulating Tuberculosis. S. R. Gloyne.—p. 57.
Results of Artificial Pneumothorax; Rôle of Other Operative Collapse Procedures in Treatment of Phthisis. R. C. Matson, R. W. Matson and M Bisaillon.—p 65.

Bulletin de l'Académie de Médecine, Paris

94: 961-1006 (Nov. 10) 1925

Prophylaxis of Leprosy in France and in Different Countries. Roux et al.—p. 963.
The Alien Sick in Paris Hospitals. P. Emile-Weil.—p. 991.
Attempts in the Middle Ages to Render the Malarial Regions Near Rome Habitable. A. Celli.—p. 997.
*Serotherapy in Mushroom Poisoning. Dujarric de la Rivière.—p. 1000.
*Induced Oleothorax and Pneumothorax. G. Kuss.—p. 1002.

Serotherapy Against Mushroom Poisoning.—Dujarric de la Rivière reports two cases of recovery from severe mushroom poisoning in which he used serum from a horse inoculated with the extract of *Amanita phalloides.* He suggests to inject 20 cc. of the "antiphallin serum" subcutaneously or, still better, intramuscularly.

Oleothorax.—Kuss' communication was summarized in the Paris Letter, Dec. 19, 1925, p. 1981.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 1419-1444 (Nov. 13) 1925

Myelemia and Malaria. H. G. S. Morin.—p. 1419.
Hypertrophic Pneumic Osteo-Arthropathy. A. Léri et al.—p. 1425.
*General Nutrition in Rickets. G. Variot and V. Nazarie.—p. 1433.
*Hemogenia-Hemophilia. P. Merklen and M. Wolf.—p. 1441.

Growth of Infants with Rickets.—Variot and Nazarie applied their pediometric method in 233 infants with different forms of rickets. They found the growth of the child affected less than is usually believed. The atrophic form of rickets, characterized by reduction of the weight and size, was manifest only in 36 per cent of the infants; 64 per cent were normal, or even above the medium size. The latter presented the hypertrophic form of rickets. Twenty-three of thirty-three with hypertrophic rickets started to walk at the usual time, and the cutting of the teeth was normal in thirty-two of thirty-seven. They admit that the rickets process may be provoked, among other factors, by bronchopneumonia, whooping cough and measles. Congenital syphilis was manifest in sixteen of their cases. Faulty feeding seemed to be more responsible for the disease than deficiency of sunlight.

Treatment of Hemogenia-Hemophilia.—Merklen and Wolf treated a case of hemogenia-hemophilia in a boy, aged over 5. Under three exposures of the spleen to the roentgen rays, supplemented by transfusion of blood, the bleeding time—which before had been twenty-two minutes—returned to normal. The coagulation time was only transiently reduced, and even then did not drop to less than an hour and forty minutes. Obviously the treatment acted only on one of the associated factors of the hemogenia-hemophilia.

Comptes Rendus de la Société de Biologie, Paris

93: 1057-1136 (Nov. 6) 1925. Partial Index

*Ion Balance of Plasma in Tar Cancer. A. Rémond et al.—p. 1061.
Action of Nerves on Cancer Growth. A. Rémond et al.—p. 1063.
Fate of Oil Injected Subcutaneously. L. Binet and P. Fleury.—p. 1076.
*Echinococcosis in a Long Bone. F. Dévé.—p. 1078.
*Bacteriophage in Collodion Sacs. C. Zoeller and Manoussakis.—p. 1091.
*Atropin and Peptone Shock. L. Garrelon and Santenoise.—p. 1096.
*Oncography of the Spleen. A. Tournade and M. Chabrol.—p. 1099.
Functional Adaptation of the Lungs. T. Vacek.—p. 1107.
Significance of the Botelho Reaction. G. Fichera.—p. 1116.
Action of Insulin on Tumor Grafts. N. Piccaluga and S. Cioffari.—p. 1118.
Action of Venoms on Striated Muscle. Houssay and Mazzocco.—p. 1120.
*Cancer of Common Bile Duct. D. Mosto.—p. 1122.
*Drugs and Epinephrin Secretion. Houssay and Molinelli.—p. 1124.
*Epinephrin Output in Asphyxia. Houssay and Molinelli.—p. 1126.
*The Syphilitic Chancre. J. J. Puente.—p. 1130.
*Fixation Abscess and Antitoxic Titer. Pico and Ferrari.—p. 1132.
Cancer Involving the Solar Plexus. J. W. Tobias and P. Bosq.—p. 1134.

Ion Balance of Plasma in Tar Cancer.—Rémond and his co-workers found a marked acidosis of the plasma of rabbits with a developed tar cancer. This was accompanied by an alkali reserve decline, thus presenting a decompensated acidosis. The fact appears to confirm Mendeleef's recent statement that acidosis is a necessary condition for proliferation of embryonal cells. The proportion of calcium ions, reduced during the growth of the cancer, notably increased in case of its regression, proving the inhibiting action of the calcium ion on the malignant process.

Experimental Echinococcosis in Tibia.—Dévé induced a typical hydatid cyst in the tibia of a rabbit, inoculating with material from a hydatid cyst in a sheep. He says that, as far as he knows, this is the first instance of experimental echinococcosis in a long bone.

The Bacteriophage in Collodion Sacs.—Zoeller and Manoussakis introduced a collodion sac with a culture of Shiga's bacillus into the peritoneal cavity of rabbits and guinea-pigs, which had previously ingested the antidysenteric bacteriophage. When the sacs were removed the next day, the bacteriophage was found inside the sac, as also when sacs containing cultures refractory to the lytic action of the bacteriophage were placed in these animals. In all the tests the bacteriophage was inactive in the sac in the peritoneum of the animals. The bacteriophage did not display any lytic action, although this was manifest with the same bacilli in vitro. The bacilli became refractory to the lysis in animals vaccinated against dysentery, as well as in the controls. The facts seem to demonstrate the different activity of the bacteriophage in vitro and in vivo.

Atropin May Prevent Anaphylactic Shock.—Garrelon and *Santenoise noted that injection of peptone does not induce* an anaphylactic shock if it is preceded by an injection of atropin, an hour and a half before. No shock followed an injection of peptone administered an hour and a half after severing the vagus or the nerves passing to the thyroid. The effect of the atropin is apparently due to its paralyzing action on the secretory fibers of the vagus in the thyroid, arresting the passage of the sensitization-inducing hormone into the circulation.

Oncograph for the Spleen.—Tournade and Chabrol give the description of their apparatus which may be applied in less than five minutes (dogs). It exactly records the changes in the outline of the spleen, registering them on a revolving drum.

Primary Cancer of the Common Bile Buct.—In one of Mosto's two patients the tumor was located above Vater's ampulla; in the other in the duodenum, reaching the transverse fissure of the liver. Obstruction with dilatation of the bile ducts, cirrhosis, enlargement of the spleen and metastases existed in both cases.

Action of Different Substances on Epinephrin Secretion.—Experiments conducted by Houssay and Molinelli on sixty chloralosed dogs (in parabiosis) showed that nicotin, cytisin, lobelin, tetramethylammonium and methyl iodid of hordein notably increased the secretion of epinephrin by direct action on the suprarenal medulla.

Epinephrin Secretion in Asphyxia.—Houssay and Molinelli say that the exaggerated production of epinephrin during asphyxia is produced in dogs by anoxemia, and not by accumulation of carbon dioxid.

Histology of Chancre.—Puente reports that hyperplasia of the blood and lymph vessels as well as increase of the interstitial connective tissue are responsible for the hardness of the syphilitic chancre.

Increase of Antitoxic Titer by Fixation Abscess.—Pico and Ferrari succeeded in enhancing considerably the antitoxin titer of diphtheria antiserum by producing a fixation abscess in the horses. They injected 5 cc. of turpentine, four days before the inoculation.

Journal de Médecine de Lyon

6: 579-608 (Oct. 20) 1925

Associated Infections in Pulmonary Tuberculosis. P. Courmont and G. Boissel.—p. 579.
*Vaccine Therapy in Idem. P. Courmont et al.—p. 597.
*Pfeiffer's Bacillus in Tuberculosis. Courmont and Boissel.—p. 603.

Vaccine Treatment of Associated Infections in Pulmonary Tuberculosis.—Courmont, Blanc-Perducet and Boissel used an autogenous or stock vaccine in twelve patients. The vaccines were obtained from cultures of fresh sputum, and contained from 2 to 4 thousand millions of bacilli per cubic centimeter. A dose of 0.5 or 1 cc., then of 1 or 2 cc. was injected every second day. The series of ten injections was sometimes repeated twice. The injections were usually well tolerated, and in certain cases were followed by transient improvement of the general condition, with reduction of sputum and bacilli. The treatment was without effect in 50 per cent of the cases. The streptococcus cases were most refractory.

Influenza Bacillus in Prognosis of Pulmonary Tuberculosis.—Courmont and Boissel found among fifty-four cases of associated infections the Pfeiffer bacillus in thirteen. This bacillus not only did not aggravate the tuberculous process, but appeared rather to promote fibroid changes and recovery. Thus the association of the Pfeiffer and tubercle bacilli in the sputum indicates a favorable prognosis in pulmonary tuberculosis.

Médecine, Paris

7: 5-80 (Oct.) 1925

Surgery in 1924 and 1925. P. Mathieu.—p. 5.
Postoperative Care in Gastric Surgery. R. Grégoire.—p 23.
Unrecognized Pancreatitis. J. Okinczyc.—p. 26.
Use of Horse Serums in Therapeutics. L. Bazy.—p. 31.
Fractures of the Acetabulum. Rouvillois and Maisonnet.—p. 36.
Iodized Oil Test of Biliary Tract. G. Cotte.—p. 42.
Tumor of Breast in Children. A. Martin.—p. 44.
Separation of Pleura from Chest Wall in Treatment of Nontuberculous Suppuration of the Lung. F. Papin.—p. 49.
Little's Disease and Orthopedics. R. Ducroquet —p. 53.
Scoliosis in Children. R. Massart.—p. 61.
Treatment of Influenza. L. Tanon and H. Cambessédes. Supplement—pp. 1-48.

Journal des Praticiens, Paris

39: 689-704 (Oct. 24) 1925

Catheterization of the Ureter in Treatment of Nephritic Colic. Legueu.—p. 689.
Brow Presentation. Jeannin.—p. 691.
*Polyradiotherapy in Tuberculous Peritonitis. J. Saidman.—p. 693.

Polyradiotherapy of Tuberculous Peritonitis.—Saidman applied ultraviolet rays in treatment in thirty cases of tuberculous peritonitis. In favorable cases, even of generalized peritonitis, the ultraviolet rays alone brought about a general improvement. In resisting cases, roentgen and infra-red rays were used also. By associating the three kinds of rays, the results were better than with other methods. The ultraviolet rays act on the general condition and hasten absorption; the infra-red on the pains and superficial infiltrations, and the roentgen rays on the deep.

Paris Médical

57: 413-436 (Nov. 21) 1925

Medicosocial and Professional Questions. P. Cornet —p 413.
*The Physician in Vocational Guidance. P. Le Gendre.—p. 420
Professional Secrecy and the Income Tax. A. Peytel.—p. 424.
Medical Consultation Before Marriage. A. Cayrel.—p. 428.
Organization of the Profession. M. Perrin.—p. 430.
French Law on Occupational Diseases. R. Piédelièvre.—p. 433.
Hygiene Taught by Example. L. Dufestel.—p. 435.

The Physician in Guidance of the Individual.—Le Gendre urges more active efforts to aid young and old, not only in choice of a trade, but in professional, social, technical, moral and regional orientation. The selection of a specialty is particularly important, and the professor may detect aptitudes or the reverse which the candidate himself may not suspect. He urges further collection of statistics showing the regional distribution of different classes of physicians and specialists. A map or other device showing these data should be available in every medical school each year.

Presse Médicale, Paris

33: 1521-1536 (Nov. 18) 1925

*Urine in Neuroses. Laignel-Lavastine and Cornelius.—p. 1521.
*Hydatid Pneumothorax and Pneumocyst. Bacaloglu and Tanasesco.—p. 1522.
Autoplastic Suture for Hernia. B. Goldenberg.—p. 1524.
*The Endocrine Glands During Starvation. G. Ichok —p 1525.

Urinary Phenomena in Mental Distress.—Laignel-Lavastine and Cornelius found hypo-acidity (preponderance of alkali ions) in the urine of all patients with melancholia and other mental distress states. This was especially pronounced during paroxysmal exacerbations. There was evidence of an increased amount of organic acids. Under ammonium hydrochlorid and calcium chlorid, given in a daily dose of 4 gm., the paroxysms of the neurosis became rarer, and mild cases recovered completely. The authors comment on the analogy with tetany in young children, or essential epilepsy, in which irritability of the vagosympathetic system is provoked by alkalosis, or reduction of the ionized calcium in the blood. The results of their research seem to open a promising field for treatment of distress neuroses with drugs to restore the acid balance.

Hydatid Pneumothorax and Pneumocyst.—Bacaloglu and Tanasesco report that rupture of a hydatid cyst of the lung caused penetration of air into the pleura in one case, and only into the cyst in a second case. Both patients recovered after the cyst membrane had been totally removed. The clinical diagnosis was confirmed by roentgen-ray examination and a positive Casoni test in one case (intradermal injection of 0.5 c.c. of hydatid fluid provoking a red eruption, persisting for a few hours).

Action of Starvation on Endocrine Glands.—Ichok cites from Stefko's research in Russia during the famine, from 1922 to 1924. His study of the endocrine glands showed that the thyroid was reduced in size while the parathyroids were abnormally large, and the suprarenals degenerated. Starvation of the woman caused involution of the fetal thymus even during intra-uterine life. No traces of the gland were found in children about 6 years old. Low eosinophil count, with backward growth corresponded to changes of the pituitary gland. The pineal gland appeared diminished. Atrophy of ovarian follicles and seminiferous tubules were the main lesions of the genital glands.

33: 1537-1552 (Nov. 21) 1925

*Leukopedesis in Anaphylaxis. M. Loeper and G. Marchal.—p. 1537.
Anaphylaxis of Mental Origin. C. Pascal and M. J. Davesne.—p. 1539.
Extraction of Foreign Bodies and Endoscopy. J. Guisez.—p. 1541.

Significance of Leukopedesis in Alimentary Anaphylaxis.—Loeper and Marchal found reduced diapedesis of leukocytes in the stomach in their five cases of alimentary anaphylaxis. They tried to check the hypersensitization of the stomach by increasing its leukopedesis, regarding this as a defensive procedure. Good results were obtained with gradually increasing doses of peptone or pepsin, or both, before meals. The action of sugar proved to be even more constant. One dose of 10 or 20 Gm. of saccharose, given with the meal, provoked a considerable leukopedesis. A dose of 0.50 Gm. of antipyrin, usually causing an eruption in one patient, was tolerated well after the sugar, given in syrup form. In another case 0.001 Gm. of atropin was added to a fish dish which previously had caused urticaria. No such reaction occurred this time. Disappearance of the anaphylactic phenomena coincided always with an increase of leukopedesis. In cases of alimentary anaphylaxis, the gastric leukopedesis should be determined, thus enabling preventive and curative treatment of the pathologic phenomena.

Revue de Pathologie Comparée, etc., Paris

25: 981-1034 (Nov. 20) 1925

*The Syphilitic Family and the Cancer Family. Pfeiffer.—p. 981.
Nascent Iodin in Treatment of Nasal Fossae. Crouzel.—p. 1003.

Syphilitic Families and Cancer Families.—Pfeiffer has traced the pathologic history of sixty-one cancer families in the Dijon district, and states that he never encountered a cancer in a man or woman without antecedent or concomitant subjacent syphilis. One family tree shows five cancers in the seventeen descendants of a syphilitic grandmother, including four sets of twins. He cites five families from the literature showing coincidence of syphilis and cancer—a total of sixty-six instances. He recalls that syphilis develops without cancer and does not develop from cancer, and hence it must be the primary of the two. The assumption that it is the cause of cancer is sustained, he says, by malignancy developing in a syphilitic lesion, as in leukoplakia of the tongue, and by the tendency to retrogression displayed sometimes by a cancer under specific treatment of the patient's syphilis. He reports a case of this kind, the carcinoma in the tonsil disappearing under the specific treatment, but it returned several months later unmodified then by any medical measures.

Schweizerische medicinische Wochenschrift, Zurich

55: 1065-1084 (Nov. 19) 1925

*Alveolar Pyorrhea. O. Müller.—p. 1065. C'cn.
Missed Abortion and Mole. C. Thelin.—p. 1070.
*Treatment of Gastric Hyposecretion. A. Jarotzky.—p. 1075.

Alveolar Pyorrhea.—Müller here concludes his study on the histology and diagnosis of alveolar pyorrhea. Twenty-four illustrations and an extensive survey of the literature are added.

Treatment of Gastric Hyposecretion.—Jarotzky administers from 80 to 150 cc. of a decinormal solution of hydrochloric acid, twice daily, to patients with hyposecretion. It acts excellently on the subjective symptoms, and also increases the secretion.

Pediatria, Naples

33: 1197-1252 (Nov. 15) 1925

Phototherapy of Rickets. U. Ferri.—p. 1197.
Progeria. Ivo Nasso.—p. 1213.
*Amboceptors in Scarlet Fever. S. De Villa.—p. 1225.
Kala-Azar in Children. F. Paradiso.—p. 1228.
Complications of Scarlet Fever Plus Diphtheria. M. B. Sindoni and F. Guccione.—p. 1237.

Amboceptors in Scarlet Fever.—Villa made complement fixation tests with the serum from late stages of scarlet fever. The reaction was always positive with extracts from scales from scarlet fever. It was positive in 70 per cent with the alcoholic extract of syphilitic liver; in 52 per cent with the alcoholic extract of guinea-pig heart, and in 47 per cent with an extract made from the scales from patients with desquamative erythroderma or sunburn. The liver extract gave positive reactions with 60 per cent of the serums from congenitally syphilitic children. The total number of serums tested is not mentioned. He believes that the reaction with extracts from scarlet fever scales is specific.

Policlinico, Rome

32: 1630-1664 (Nov. 23) 1925

*Bites of Asses. A. Sala.—p. 1637.

Bites of Asses.—Sala observed that when a person was bitten by an ass, the wound was exceptionally slow in healing. It takes months, especially with injury to the bones. The wound smells bad, and becomes necrotic, not producing good granulations. Irregular fever and chills, pains and impairment of the general condition are typical features. Chlorinated soda acts well locally. Injections of small doses of arsphenamin shorten the disease. He is making bacteriologic investigations on these wounds and on the mouth of asses.

Riforma Medica, Naples

41: 1009-1032 (Oct. 26) 1925

*Spirochetes in Multiple Sclerosis. P. Verga.—p. 1009.
The Adams-Stokes' Syndrome. P. B. Zanetti.—p. 1013.
The By-Effects of Arsphenamine. I. Iacono.—p. 1019.
Muscle Sign of Laryngeal Tuberculosis. E. di Lauro.—p. 1027.

Spirochetes in Multiple Sclerosis.—Verga examined the central nervous system in two cases of multiple sclerosis, using the Levaditi, Noguchi and Jahnel methods. The results were negative.

Arquivos do Inst. Bact. Camara Pestana, Lisbon

5: 257-361, 1924

Oligodynamic Action of Metals Applied in Sterilization of Water. C. Affonso.—p. 257.
*The d'Herelle Bacteriophagy Phenomenon. A. Saldanha.—p. 266.
Bacillemia in the Tuberculous. C. Mendes Dordio.—p. 327.

Bacteriophagy.—Saldanha reports extensive research on the d'Herelle phenomenon, the results of which have convinced him that none of the three theories advanced to date to explain bacteriophagy can be accepted. Is it conceivable, he asks, that an ultramicrobe can be insensible to the most potent antiseptics, or that a ferment is capable of multiplying itself. If the lytic agent were something secreted by the bacteria themselves, it would appear earlier and be more profuse when the bacteria are numerous; but the bacteriophage multiplies much more rapidly in emulsions with scanty bacteria.

Prensa Médica Argentina, Buenos Aires

12: 461-496 (Oct. 10) 1925

Pelvic or Pararectal Echinococcosis. G. Zorraquín.—p. 468.
*Chronic Eczema. M. R. Castex and A. F. Camauer.—p. 470.
*Tolerance for Metal Scrap in Eye. Adrogué and Crocco.—p. 479.
Serologic Test for Cancer. A. H. Roffo.—p. 481.

Eczema and the Vegetative Nervous System.—Castex and Camauer insist that the primary factor in chronic symmetrical eczema is usually some upset in the balance of the vegetative system. Two cases are described in detail, out of their extensive experience, to demonstrate that restoration of the vegetative balance should precede local measures, and may cure without them, merely by correction of autointoxication, abuse of alcohol or tobacco or treatment of congenital syphilis.

Tolerance of Foreign Body in Eye.—Adrogúe and Crocco relate that an iron splinter that had been in the anterior chamber of a recruit since childhood seemed to be so perfectly tolerated that the recruit was accepted without serious attempt to remove the foreign body. The corrected vision was 5/10.

Revista de la Soc. de Medicina Interna, Buenos Aires

1: 341-388 (Aug.) 1925

*Posttraumatic Epidemic Encephalitis. Castex et al.—p. 343.
*Hematology of Amebic Hepatitis. H. J. D'Amato.—p. 352.
*Splenectomy in Endocarditis. P. Escudero and E. V. Merlo.—p. 361.
*The Duodenal Tube in Cholelithiasis. J. W. Tobias.—p. 365.
Gerodermic Eunuchoidism. C. Dominguez and R. Orlando.—p. 372.
*Treatment of Colitis. M. R. Castex and J. J. Beretervide.—p. 383.

Posttraumatic Epidemic Encephalitis.—Castex, Romano and Di Cio have been unable to find any case on record like the one they describe in which the syndrome of epidemic encephalitis developed after a trauma with probable fracture of the skull. The young man had been healthy until he fell in getting out of a street car. He left the hospital much improved in a month; slight strabismus and nystagmus and slight sluggishness in his movements were the only symptoms left.

The Blood with Suppurating Amebic Hepatitis.—D'Amato's findings in thirty cases failed to reveal any differentiating features.

Splenectomy in Treatment of Endocarditis.—Escudero and Merlo report that no permanent benefit was derived from the removal of the large spleen in the case of endocarditis lenta described.

The Duodenal Tube in Cholelithiasis.—Tobias injected magnesium sulphate daily in a man aged 36 subject to gallstone epigastric pains. Large numbers of small gallstones were voided. Two small stones were caught in the tube on one occasion. The patient was advised to continue the use of the duodenal tube daily for a time.

Treatment of Ulcerative Colitis.—Castex and Beretervide report subsidence of all subjective and objective disturbances in three cases of long rebellious chronic colitis under treatment with acriflavin by Crohn and Rosenberg's technic.

Semana Médica, Buenos Aires

2: 1013-1080 (Oct. 22) 1925

*Inguinal Adenitis. F. Destéfano and R. F. Vaccarezza.—p. 1013.
History of Phonendoscopy. A. Bianchi.—p. 1052.
Action of Colchicin on Guinea-Pig Stomach. A. Bergman.—p. 1056.
Compulsory Inspection of Teeth. J. F. de la Madrid.—p. 1060.
Treatment of Surgical Tuberculosis. J. Valls.—p. 1064.
Hen's Egg Containing Second Complete Egg in Its Shell.—p. 1066.

Subacute Inguinal Lymphogranulomatosis.—Destéfano and Vaccarezza report excellent results in treatment of this tenacious disease with antimony and potassium tartrate, used in seventy-two cases in the last two years, bilateral in twenty-six. They gave the drug by the vein in a 1 per cent solution, twice a week; usually four to ten injections sufficed but sometimes up to fifteen or more were given. The only contraindication is kidney disease. The lesions retrogressed under the action of the drug alone, and it did not seem necessary even to incise the abscess. The general health improved likewise. An ice bag was often useful. They reiterate that the action is so manifest and so constant that it deserves to rank as a specific. The details of the entire seventy-two cases are given. All were completely or partially cured.

Beiträge zur klinischen Chirurgie, Berlin

134: 483-640, 1925

Illumination of Operating Room. E. Heller.—p. 483.
*Tryptic Ferment in Gallbladder. K. H. Erb and F. Barth.—p. 507.
Acute Cholecystitis After Resection of Stomach. Flörcken.—p. 527.
*Osteoporosis and Malacia After Bile Fistulas. H. Dieterich.—p. 530.
Cancer of Cystic Duct. H. Hellner.—p. 554.
*Lipoids and Healing of Wounds. Berberich and Eliassow.—p. 561.
Healing of Fractures. E. Bergmann and C. R. H. Rabl.—p. 567.
Epignathus. E. Stahnke.—p. 573.
Resection of the Cardia. H. Wodsack.—p. 584.
Syphilis of the Stomach. E. Gmelin.—p. 597.
Regeneration of Cartilage. C. Häbler.—p. 602.

Tryptic Ferment in Gallbladder.—Erb and Barth found a proteolytic ferment in the bile in 75 per cent of their grave cases of cholecystitis. They think that it is trypsin transported there by the blood.

Osteoporosis and Malacia After Bile Fistulas.—Dieterich observed an enlargement of the parathyroids in a dog with osteomalacia and osteoporosis due to a persisting biliary fistula.

Lipoids and Healing of Wounds.—Berberich and Eliassow fed large quantities of cholesterol to rabbits. The granulation tissue of aseptic wounds in these animals contained much cholesterol. No lipoids were found in the wounds of animals fed with lecithin, but these wounds showed a tendency to suppurate.

Deutsche medizinische Wochenschrift, Berlin

51: 1935-1974 (Nov. 20) 1925

So-Called Traumatic Neuroses. E. Stier.—p. 1935.
*Scarlet Fever. U. Friedemann and H. Deicher.—p. 1938. C'cn.
Abortion and the Penal Code. H. Küstner.—p. 1941.
Grave Ulcerative Colitis. G. Seefisch.—p. 1943.
Acid Fat Milk. A. Adam.—p. 1946.
Blepharochalasis and Double Lip. W. Eigel.—p. 1947.
*Incubation Period. R. Weichbrodt.—p. 1949.
Electrodialysis of Serum. G. Ettisch and W. Beck.—p. 1950.
Pulmonary Tuberculosis After War Wound. Klieneberger.—p. 1951.
Inertia of the Uterus. Abel.—p. 1952.
*Treatment of Hemorrhoids. R. Semler.—p. 1953.
*Pernicious Anemia in Brothers. F. Johannessohn.—p. 1953.
Diathermy in Intermittent Claudication. G. Scheipner.—p. 1954.
Own Blood or Own Serum? J. Vorschütz.—p. 1954.
Treatment of Furunculosis. Grosschopff.—p. 1955.
Treatment of Meningitis. A. Reiche.—p. 1955.
Treatment of Gonorrhea. F. Dietel.—p. 1955.
Industrial Hygiene. R. Müller.—p. 1958.
Social Insurance and Tuberculosis. Blümel.—p. 1959. C'cn.

Scarlet Fever.—Friedemann and Deicher confirm the American investigations on the etiology and treatment of scarlet fever. They regard the method used by the Dicks in establishing the toxin of scarlet fever as new and entirely original, and they also appreciate Dochez' work. They had at first some difficulties with the preparation of a sufficiently potent toxin, but these were overcome. They conclude that all of Koch's requirements for the acceptance of the streptococcus etiology of scarlet fever have been fulfilled. They obtained a small amount of the Dochez serum which they used in fourteen grave cases. It did not influence the complications due to the cocci, but its antitoxic potency was at least ten times greater than that of the best convalescent serum.

Incubation Period.—Weichbrodt infected a general paralysis patient simultaneously with malaria and relapsing fever. The recurrens infection did not become manifest until after the malaria had been cured with quinine. He thinks that a similar depressive immunity may be the explanation of the action of malaria treatment on general paresis.

Treatment of Hemorrhoids.—Semler points out that a slight insufficiency of the heart frequently causes dilatation of the hemorrhoidal veins. He had good results with treatment of hemorrhoids by suppositories containing digitalis.

Pernicious Anemia in Brothers.—Johannessohn observed pernicious anemia in two brothers in the sixties. Achylia had been manifest in both and also in the mother, who died from cancer of the stomach.

Klinische Wochenschrift, Berlin

4: 2233-2280 (Nov. 19) 1925

*Histophysiology of the Artery Wall. N. Anitschkow.—p. 2233.
Microcapillary Pulse. H. Heimberger.—p. 2235.
Heart Rhythm in Valsalva's Experiment. Mosler and Burg.—p. 2238.
*The Lymphocyte Question. S. Bergel.—p. 2242.
Contractions of Nonpregnant Uterus. H. Hinselmann.—p. 2244.
Psychogenia and Diagnosis. H. Fendel.—p. 2246.
*Eidetic Predisposition (Jaensch) in the Young. P. Karger.—p. 2247.
*Peripheral Thrombolysis. G. Nagy.—p. 2249.
Cultivation of Tubercle Bacilli. K. Weise and H. Fernbach.—p. 2250.
*Glycemia and Cancer. F. Silberstein et al.—p. 2252.
Simplified Time Record. H. Dreyfuss.—p. 2252.
*Size of Erythrocytes. G. Taubmann.—p. 2254.
*Function of Supernumerary Extremity. R. Kahn.—p. 2255.
*Innervation of Mamma. R. Kahn.—p. 2256.
*Insulin and Pituitary Hormone. J. Serebrijski and H. Vollmer.—p. 2256.
*Menstrual Complication. P. Zadik.—p. 2257.
Conservative Treatment of Surgical Tuberculosis. Staub-Oetiker.—p. 2257.
Methemoglobin and Catalytic Action. R. Meier.—p. 2261.
Merger of German Dye Factories. W. Heubner.—p. 2279.

Histophysiology of the Artery Wall.—Anitschkow reviews chiefly the experiments made by himself and his collaborators on the permeability of the walls of large arteries. Injections of trypan blue demonstrated the presence of a current of lymph passing from the lumen of the arteries to the adventitia. The endothelium behaves like an enormous capillary. The imbibition of the arteries is most pronounced at the points which are under a mechanical strain or which are injured from the outside. Addition of acid or hypotonic solutions delay the imbibition, alkalis promote it. The same injuries enhance the penetration of lipoids into the wall. This process, which he regards as the most important factor in the genesis of atherosclerosis is only an exaggeration of the normal formation of lymph in the arteries. The products of plasma proteins appear in the form of a hyaline substance in the space between the endothelium and the internal elastic membrane. They represent an infiltration, not a degeneration, of the wall of the artery.

The Lymphocyte Question.—Bergel discusses the significance of the lymphocyte. He is opposed to the overestimation of the reticulo-endothelial system. Spirochetes thrive in it, while they are destroyed by lymphocyte infiltrates.

Eidetic Predisposition in the Young.—Karger tested children for their ability to visualize pictures they had been looking at. Contrary to Jaensch, who discovered this eidetic phenomenon ("eidetic constitution"), he failed to find any relation to tetany or hyperthyroidism. The children who manifested this faculty were generally of a cheerful, bright and otherwise normal type. Some of them were dreamers. The eidetic faculty disappeared with puberty.

Peripheral Thrombolysis.—Nagy produced the Rumpel-Leede phenomenon. He found a marked lowering of the number of blood platelets in the blood of the arm; it may affect even their number in the general circulation. He concludes that thrombopenia is a sequel—not a cause—of the hemorrhagic diathesis.

Glycemia and Cancer.—Silberstein, Freud and Révész observed a gradual increase of the reducing power of the blood during insulin treatment of patients suffering from cancer. Later, the blood sugar frequently decreased. They do not attribute the increased reducing power to alpha-beta glucose.

Size of Erythrocytes.—Taubmann recommends to use in Löwy's method the blood from diabetic patients, which has little affinity for acid stains. These slides are stained for three or four minutes with a 1 per cent solution of methyl green, and dried. The blood to be tested is smeared on the same slide, with cautious fixation by heat, and is stained with eosin.

Function of Supernumerary Extremity.—Kahn observed a case of spontaneous hypermelia in a frog. The extremity was not in motor or sensory connection with the central nervous system, but the central vasomotor regulation was manifest. The muscles were in perfect condition. This speaks for the independent development of muscles and of the central nervous system.

Innervation of Mamma.—Kahn found more casein and fat in the milk from the denervated mammary gland of guinea-pigs than in the milk from the normal side. The sugar content varied.

Insulin and Pituitary Hormone.—Although insulin alone inhibits diuresis, it inhibited the antidiuretic action of pituitary extracts in Serebrijski and Vollmer's experiments.

Menstrual Complication.—Zadik reports a case of chlorosis. The young girl had always, at the time of each menstruation, a pink to red secretion oozing from the nipples. It contained no erythrocytes nor lipoids.

Medizinische Klinik, Berlin

21: 1751-1788 (Nov. 20) 1925

Treatment of Obesity. O. David.—p. 1751.
Climatology of High Altitudes. C. Dorno.—p. 1754.
Surgery of Rectal Cancer. H. Lorenz et al.—p. 1757. C'tn.
Hypersensitiveness. I. W. Samson.—p. 1760.
Protective Dressing. L. Moll.—p. 1762.
*Spontaneous Gangrene. V. R. Stühlern et al.—p. 1765.
*An Eosinophilic Leukemoid Syndrome. P. Schmidt.-Weyland.—p. 1767.
*Roentgenotherapy in Peripheral Paralysis. F. Kraus.—p. 1768.
The p_H of Urine in Dermatoses. F. Jacobsohn and A. Joseph.—p. 1771.
Physical Therapy. G. Hauffe.—p. 1774. C'td.
Quinin in General Practice. Saphra.—p. 1775.
Baron Löschner, 1809-1887. F. Pick.—p. 1784.

Spontaneous Gangrene.—Stühlern, Agulowa and Babkowa had good results with small doses of pilocarpin and insulin in treatment of spontaneous gangrene. They discuss the influence of these remedies on the blood sugar.

An Eosinophilic Leukemoid Syndrome.—Schmidt-Weyland reports on a case of eosinophilic leukocytosis (67 per cent of the 90,000 leukocytes were eosinophils), with ulcers in the sigmoid, and eosinophil infiltrates in the mesenteric nodes and spleen. On account of the absence of younger forms, the diagnosis of leukemia is uncertain.

Roentgenotherapy in Peripheral Paralysis.—Kraus has now applied to clinical cases the results of his experimental work. He reports favorable results from roentgen-ray therapy combined with diathermy and other physical methods in patients suffering from facial, popliteal and other paralysis, and in a case of suture of an injured radial nerve.

Münchener medizinische Wochenschrift, Munich

72: 1995-2042 (Nov. 20) 1925

*Treatment of Gastric Ulcer. P. Morawitz.—p. 1995.
*Paroxysmal Tachycardia. W. Stepp and E. Schliephake.—p. 1997.
Visualization of the Gallbladder. H. Stegemann.—p. 1999.
*Roentgenoscopy Without Darkness. G. Bucky and P. Stumpf.—p. 2001.
*Optic Radiation. R. Cords.—p. 2003.
*Venesection. Nonnenbruch.—p. 2004.
*Reposition of Dislocated Mandible. O. Wiedhopf.—p. 2007.
Bleeding Gallbladder. H. Heusser.—p. 2007.
*Aromatic Oxyacids in Blood. E. Becher et al.—p. 2009.
*A New Principle for Titration. L. Flatow.—p. 2009.
*General Paralysis. J. Schükry.—p. 2011.
*Vaginal Acidity and Gonorrhea. C. L. Rehn.—p. 2011.
Treatment of Eczema. H. Nagell.—p. 2014.
Treatment of Cholera Infantum by Monrad's Method. A. Bratusch-Marrain.—p. 2015.
Conservative Treatment of Furuncles. J. Fabry.—p. 2016.
Increasing the Resistance of the Skin. A. Bacmeister.—p. 2017.
*Etiology of Endemic Goiter. H. Ritzmann.—p. 2018.
Cloudiness of Aqueous Solution of Boric Acid. E. Wirth.—p. 2019.
Jean Paul F. Richter and Medicine. G. Sticker.—p. 2019. C'cn.
Sleep in Children. F. Hamburger.—p. 2021.
Gymnastics in Schools. A. Bier.—p. 2024.

Treatment of Gastric Ulcer.—Morawitz advises to try internal treatment first, even for patients with a niche. The immediate danger of surgical treatment is not great, but grave disturbances ("gastro-enterostomy disease") are quite frequent. Some people cannot get along without gastric digestion. Another reason is the spasm of the wall of the stomach, which he considers important in the genesis of the ulcer as well as of the accompanying pains. He supplements the Sippy treatment with atropin, starting with four pills containing 0.25 mg. each, and increasing until the limit of the patient's tolerance (dryness in the mouth) is reached. Parenteral protein therapy may do some good, but it is no substitute for the diet treatment.

Cholin in Paroxysmal Tachycardia.—Stepp and Schliephake's patient had attacks of paroxysmal tachycardia. Between them the auricles still contracted 220-240 times per minute, but conduction was blocked 3:1 or 2:1. They controlled the attacks at first with intravenous injections of 0.5 to 0.75 quinin or of strophanthin. Later on this treatment became dangerous because of the frequency of the attacks. They obtained full and practically immediate success with intramuscular injections of a preparation of cholin. Great caution is necessary with intravenous injection (0.5 cc. of a 5 per cent solution of cholin chlorid). A further dilution and slow injection are advisable.

Roentgenoscopy Without Darkness.—Bucky and Stumpf have devised a simple method which makes it possible to do skiascopy in a lighted room. The light radiating from the fluorescent plate is a monochromatic green. Consequently it has proved possible to find a filter of equal color through which this light passes freely, and which yet absorbs completely the complementary red light used in the room. This light can be sufficiently strong for reading or writing, and the plate appears black unless exposed to the roentgen light. The details of the picture are as clear as in a darkened room, if not clearer. The green filter may be applied either to the plate or made in the form of eye glasses. They mention a few of the numerous advantages of the invention.

Optic Radiation.—Cords analyzed six cases of hemianopia due to a lesion of the optic radiations. The optomotor ("railroad") nystagmus toward the blind side (opposite to the lesion) was absent in all of them.

Venesection.—Nonnenbruch recommends to withdraw about 5 cc. of blood per kilogram of body weight in a therapeutic venesection. It is indicated in apoplexy with signs of heart insufficiency and plethora, especially of the head. It is strictly contraindicated in the so-called ischemic apoplexy due to thrombosis and embolism. Only in air embolism a beneficial action may be observed. Polycythemia is favorably influenced. The diuretic action is manifest in cases in which venesection relieves the congestion of the kidneys. Contrary to Becher, he has found that venesection does not raise the nonprotein nitrogen of muscles after nephrectomy any more than it would increase without venesection. He discusses the theories suggested to explain the effects of venesection, but admits that we do not know much about it.

Reposition of Dislocated Mandible.—Wiedhopf confirms the excellent result of injection of about 5 cc. of a local anesthetic into the temporal, masseter and pterygoid muscles. Reduction is easily made five or ten minutes later.

Aromatic Oxyacids in Blood. — Becher, Litzner and Doenecke found aromatic oxyacids in normal blood. Large amounts (600-700 cc.) of blood were necessary. The greater part of the oxyacids was apparently free.

A New Principle for Titration.—Flatow has devised what he says is a new titrimetric principle which seems to be adaptable to a great variety of problems. He uses a dilute solution of an indigo salt for titration of potassium ferricyanid in an alkaline solution. The application of the method for determination of the smallest amounts of glucose and uric acid is given. It is probable that the diazo compound found by Leimdörfer in the blood is also determined by this titration.

General Paralysis.—Schükry made the Spatz iron reaction on the brain in 147 cases. It was positive in all the thirty-seven patients with a clinical diagnosis of general paralysis and negative in all the others. He attributes the current opinion on the rarity of the disease in the Orient to a lack of diagnostic means. He found the disease in 7.5 per cent of the male and in 2.5 per cent of the female inmates of the insane asylum in Constantinople. It was encountered in some patients who came from the central parts of Asia Minor.

Vaginal Acidity and Gonorrhea.—Rehn confirms the value of Danin's litmus paper test for gonorrhea. Only 1.5 per cent of his fifty-six gonorrhea patients had an acid reaction of the vaginal (not cervical) secretion. In doubtful cases, he presses a filter paper (about 1 cm. square) against the wall of the vagina, extracts the paper with 5 cc. of distilled water, adds five drops of a phenolphthalein solution and titrates with one hundredth normal sodium hydroxid. Values below 0.1 are almost pathognomonic for gonorrhea, while an acidity of 0.12 practically excludes it. The determination of the reaction with indicators is also of value. An alkaline reaction is, however, rare.

Etiology of Endemic Goiter.—Ritzmann observed an epidemic of acute goiter (with hypothyrosis) in two children, a group of young dogs, and a few young pigs—all fed on the fresh milk from a group of cows. At the same time seven of the new-born calves had large goiters. There were no further cases of the disease after the cows had been brought in from the pasture. He suggests, as one of the possible causes, the deficiency of calcium in the soil of his district together with the omission of the usual calcium fertilizer in that and the preceding year. Another possibility might be the plant *Chaerophyllum hirsutum*, which occurs in these pastures, and which is called "calves' goiter"—perhaps not without reason.

Wiener klinische Wochenschrift, Vienna

38: 1277-1300 (Nov. 26) 1925

*Prevention of Goiter. J. Wagner-Jauregg.—p. 1277.
*A Hormone of Heart Action. L. Haberlandt.—p. 1280.
The Blood After Transfusion. A. Sachs and E. Widrich.—p. 1281.
**Biology of the Placenta. L. Kraul and L. Bodnar.—p. 1282.*
Sulphur Baths. E. Maliwa.—p. 1284.
Ulcers of Stomach and Duodenum. G. B. Gruber.—p. 1288. C'cn.
The Question of School Vacations. J. K. Friedjung.—p. 1290.
Treatment of Acute and Chronic Suppurating Processes. A. Fraenkel. Supplement.—pp. 1-20.

Prevention of Goiter.—Wagner-Jauregg analyzes the alleged frequency of hyperthyroidism developing from the use of iodized salt, and concludes that only extremely few cases are probable. The amount of iodin contained in Austrian *Vollsalz* (5 mg. per kilogram of salt) corresponds to less than the amount of iodin ingested by the food in the average community.

A Hormone of Heart Action.—Haberlandt observed an accelerating action in the fluid in which the sinus or basal part of the ventricle of the frog heart had been beating. The artificially irritated apex of the heart produced no such substance. Haberlandt believes that it is a hormone of the heart action, but he does not believe that it is identical with the "accelerans substance" discovered by Loewi.

Biology of the Placenta.—Kraul and Bodnar found much more arsenic in the blood from the umbilical cord than in the retroplacental hematoma in cases in which neoarsphenamin had been injected.

Zentralblatt für Chirurgie, Leipzig

52: *2513-2576 (Nov. 7) 1925*

*Autohemotherapy of Postoperative Bronchitis. E. Graser.—p. 2514.
Retrograde Incarceration. E. Pólya.—p. 2518.
Surgery of Cancer of Breast. G. Steigelmann.—p. 2522.
Care of the Stump After Appendectomy. L. Seyberth.—p. 2525.
Peritonitis of Hernial Sac. B. Cohn.—p. 2526.
Surgery of Scoliosis. Plagemann.—p. 2528. Comment. Perthes.—p. 2529.

Autohemotherapy of Postoperative Bronchitis.—Graser used Vorschütz's method in sixty cases. If the injection of 40-80 c.c. of the patient's own blood is made on the same day in which the fever occurs, the temperature and subjective sensations almost invariably become normal on the next day. This occurs in spite of an occasional further short clinical progress of the pneumonia.

52: 2641-2688 (Nov. 21) 1925

Gold Treatment of Surgical Tuberculosis. Siedamgrotzky.—p. 2642.
Pyloric Ulcer in Poisoned Child. R. Stohr.—p. 2644.
Diverticulum of the Appendix. F. v. Fáykiss.—p. 2647.
Exostosis Bursata. A. Abramowa.—p. 2649.
"Treatment of Intestinal Fistulas." P. Ahrens.—p. 2655.
*"Ulcer Recurrence After Resection." M. Friedemann.—p. 2659.
"Technic for Bone Sutures." R. Demel.—p. 2664.

***"Ulcer Recurrence After Resection."**—Friedemann attributes* the recurrence of gastric ulcer after resections to the fact that the resection of the stomach was not extensive enough.

52: 2689-2752 (Nov. 28) 1925

Hernias of the Supravesical Fossa. K. Vogeler.—p. 2690.
*The Mesenteriolum in Appendicitis. S. Rubaschow.—p. 2695.
Discission Treatment of Varicose Veins. F. Bange.—p. 2696.
Early Skin Symptoms in Cancer. A. Harf.—p. 2699.
Local Anesthesia in Surgery of the Stomach. O. Orth.—p. 2701.
Arthroplasty. J. Hass.—p. 2702.
Suspension Treatment of Spondylitis. S. C. Yü.—p. 2706.
Intraneural Injections. H. Boit.—p. 2708.
Foreign Bodies in Alimentary Tract. L. P. Mariantschik.—p. 2710.

The Mesenteriolum in Appendicitis.—Rubaschow found various pathogenic germs on the mesenteriolum in twenty-five of thirty-five cases of appendicitis.

Zentralblatt für Gynäkologie, Leipzig

49: 2513-2592 (Nov. 7) 1925

Roentgen Dosage in Gynecology. T. Neeff.—p. 2513.
Temporary Roentgen Sterilization of Women. H. Weigand.—p. 2525.
*Sources of Error in Interfereometry. A. Streck.—p. 2538.
*Acetylene Anesthesia. J. Maier and E. Mauerer.—p. 2544.
*Acetylene Anesthesia and Postpartum Period. E. Mauerer.—p. 2551.
*The Blood in Acetylene Anesthesia. E. A. Mueller.—p 2556.
**Diagnosis of Gonorrhea in Women. W. G. Schultz.—p. 2559.*
Diagnosis of Retroflexion of the Uterus. H. Stribrny (Silber).—p. 2571.

Sources of Error in Interfereometry.—Streck gives details of the sources of error in interfereometric seroreactions in pregnancy and cancer.

Acetylene Anesthesia and Postpartum Period.—Mauerer finds that acetylene anesthesia frequently shortens the postpartum period and reduces the hemorrhage.

The Blood in Acetylene Anesthesia.—Mueller found that acetylene anesthesia does not influence a previously normal blood count.

Diagnosis of Gonorrhea in Women.—Schultz reports on the war experiences in Gauss' service, Würzburg. The cervix and urethra were simultaneously affected in 90.5 per cent. of their cases. In 75.4 per cent. of them the rectum was also affected. The best instrument to obtain specimens from the urethra was found in Asch's blunt spoon; from the cervix, Asch's forceps; from the rectum, the spoon used in examination for worms. It was of great advantage to clean the urethra or cervix, superficially, by dabbing with gauze before securing the smear. The procedure frequently fails, if made less than two hours after the last micturition. The results were positive in 98.9 per cent. of their cases. If five smears are negative, a combined mechanical, chemical and biologic provocation with ten subsequent smears is advisable.

Zentralblatt für innere Medizin, Leipzig

46: 1097-1112 (Nov. 14) 1925

*Blocking the Splanchnic Nerves. M. Kappis.—p. 1097.

Blocking the Splanchnic Nerves.—Kappis recommends to make the patient lie down on the side opposite to that of the injection. The needle is inserted just below the twelfth rib, about 7-8 cm. from the median line, at an angle of 30-40 degrees to the sagittal plane. The needle should be 10-12 cm. long. At a depth of 7-9 cm. one feels the body of the vertebra, and palpates with the needle forward until it glides over the edge of the vertebra. It is pushed in then but not more than for 0.5 cm. The fluid (30-40 c.c. of a 0.5 per cent. procain solution) must not be injected before ascertaining the possibility *of being in a vein (cava) or the spinal canal.* It is best to have the patient cough and strain. Deaths have occurred from overlooking this measure.

Časopis lékařů českých, Prague

64: 1645-1680 (Nov. 14) 1925

Nocturnal Pathology K. Weber.—p. 1646. C'cn., p. 1698.
Kidney Function Tests in Surgery. K. Neuwirt.—p. 1651.
*Flint's Sign and Aortic Disease. Stanojevič and Vančura.—p. 1654.
Medicolegal Case of Hebephrenia. T. Hegner.—p. 1658.
*Standardization of Antitetanus Serums. B. Feierabend.—p. 1661. C'cn.
Physical Chemistry in Biology. V. Podroužek.—p. 1665. C'cn.
Antiphlogistic Action of Camphor. S. Petlach.—p. 1666.
Migraine. J. Grczdanovič.—p. 1668. C'cn., p. 1704.

Flint's Sign and Aortic Disease.—Stanojevič and Vančura found Flint's presystolic murmur and fremitus in twenty-two of 256 cases of aortic insufficiency. Two of them came to necropsy: No changes of the mitral ostium were found. The atrioventricular conduction time was prolonged. The symptom has probably a similar, if not identical origin with the gallop rhythm. The relative stenosis of the mitral ostium is due to a dilatation of the left ventricle, with good *function* of the fibrous and muscular ring around the mitral valve.

Standardization of Antitetanus Serums.—Feierabend tested various commercial preparations of tetanus antitoxin imported into Czechoslovakia. None of them contained the amount of antitoxin claimed. This is especially important in the preventive use of the serum. He lost a horse injected prophylactically with antitoxin which had only one eighth of the strength claimed.

Prophylaktitcheskaia Medicina, Kharkov

4: 1-248 (Oct.) 1925. Partial Index

*Vaccine in Scarlet Fever. A. Beresneff.—p. 12.
Prophylaxis of Measles. A. Skrotzky.—p. 36.
American Schools from Health and Hygiene Standpoint. Marzeef.—p. 62.

Vaccination in Scarlet Fever. — Beresneff's observations were made on 129 untreated scarlet fever patients and 103 that had been treated with Zlatogoroff's vaccine, injected subcutaneously every half hour, or two hours, till the fever subsided and the eruption disappeared. The injections were not given to patients with albuminuria or already subsiding eruption. The eruption improved the next day, disappearing usually on the third or fourth day of the disease. The general condition showed marked benefit, and nephritis seemed to occur less frequently under this treatment. The vaccine did not exert any influence on other complications. The mortality was 8.7 per cent. among the treated, 11 among the untreated. Protective inoculation was used in 1,939 children, mostly from 5 to 16 years old. Zlatogoroff's culture is not killed by heat, but 0.5 per cent. of phenol is mixed with it. The streptococci number a thousand millions per cubic centimeter. From one to three injections of 0.1 to 0.5 c.c. of the vaccine were given at five to seven day intervals. Only two of the vaccinated contracted mild scarlet fever, although they were not isolated from scarlet fever patients. About 1,495 Dick tests were applied for control. The test appeared to be positive in twelve children with a scarlet fever history; in 20 per cent. of the vaccinated, and in 25 per cent. of the nonvaccinated with no history of scarlet fever. Thus the difference between the groups was insignificant. There was also a large number of false and uncertain reactions.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 2067-2186 (Nov. 7) 1925

*Medical Education in Europe. G. van Rijnberk.—p. 2068. C'cn.
*Diagnosis of Epidemic Encephalitis. L. Bouman and E. Janzen.—p. 2070.
*Multiple Cases of Scarlet Fever. Veldhuyzen and Vos.—p. 2087.
*Fistula from Overlooked Sponge. C. Knapper et al.—p. 2096.
*The Hangman as a Medical Practitioner. M. A. van Andel.—p. 2100.

Medical Education in Europe as Seen by an American.—Van Rijnberk here concludes his long analysis of what he calls "this marvellously well conceived and admirably written book of Flexner's. It is incredible the amount of matter and authentic data that are compressed into the short sentences, clear and sharp as if cut from rock crystal. It is a book crammed with information and wisdom."

Diagnosis of Epidemic Encephalitis.—Bouman and Janzen chart the early symptoms of beginning epidemic encephalitis as observed in 1,174 cases. Headache heads the list, noted in 46 per cent.; vomiting, diplopia, character changes, delirium and tremor in, respectively, from 18 to 5 per cent. In their personally observed cases, sleeplessness as an early symptom was nearly as common as somnolency. They list thirty-three early symptoms, commenting on their great variety and on the dethroning of the Argyll Robertson sign as specific of syphilis, and of bilateral paralysis of accommodation, without pupil disturbances, as peculiar to diphtheria, and of the facialis phenomenon as pertaining exclusively to tetany—all these may be encountered in incipient epidemic encephalitis. The most instructive, however, besides the sleep and ocular muscle disturbances, are the hyperkinesis and akinesis, especially the expressionless atony of the face muscles and the dazed aspect.

Multiple Cases of Scarlet Fever.—Of the 1,310 recorded cases of scarlet fever in Amsterdam during 1924, all but 282 were in separate families. Two families had five and twenty-one had three cases. In fourteen of the 146 home treated multiple cases, the interval was less than a week between the first and second cases, as also *in eighty-seven of the 1,146 hospital treated.* Some of the numerous cases of infectious sore throat at the time may have been abortive scarlet fever. Repeated mild infection from these carriers may have entailed immunity. This assumption would explain the lesser susceptibility to scarlet fever of older children.

Fistula Between Bladder and Small Intestine.—A large calculus in the bladder had formed around one end of a gauze sponge. The rest of the gauze lay in the adherent small intestine. A tumor near the uterus had been removed a year before. The gauze was removed through a laparotomy but fatal peritonitis followed.

Practice of Medicine by the Hangman.—Van Andel presents evidence that in the seventeenth and eighteenth century the hangman assumed the right to practice medicine and surgery. His article is entitled "Our Confrère the Hangman," and tells of the long efforts of the organized profession to put an end to this custom.

Hospitalstidende, Copenhagen

68: 969-984 (Oct. 22) 1925

*Protein-Fat Ratio in Diabetic Blood. L. O. Christensen.—p. 969.
Subacute Inguinal Lymphogranulomatosis. A. Kristjansen.—p. 974. C'td.

Relations Between the Protein and the Fat Content of the Serum in Diabetes.—The range in three diabetics in coma was, with protein, from 5.77 to 10.47 per cent while the fat varied only from 0.06 to 0.16 per cent. The fat content was normal in all but three of sixteen free from coma and of seven in eleven with impending coma. No subnormal fat percentage was recorded in any instance, and an exceptionally high content only once. In cases of nephrosis the hydremia is more pronounced than in diabetes; possibly this may have something to do with the lipemia common with nephrosis. In one case of the latter the serum protein was 5.09 and the blood fat 0.4 per cent.

Ugeskrift for Læger, Copenhagen

87: 923-948 (Oct. 22) 1925

Atypical Eruptions. H. Heckscher.—p. 923.
*Injection Treatment of Varicose Veins. V. Meisen.—p. 929. C'cn, p 964.
Genius Epidemicus at Copenhagen. A. Magelssen.—p. 933.
*Diagnosis of Blood Disease. I. Freuchen.—p. 936.
*Fatal Gastric Hypersecretion. H. S. Biilmann.—p. 937.
Emphysema During Expulsion Period of Labor. A. G. Lauritzen.—p. 938.

Injection Treatment of Varicose Veins.—Meisen describes with illustrations his extensive experience with injection of sodium citrate or sodium salicylate to induce thrombosis and obliteration of the lumen of varicose veins. His experiments on horses and laboratory animals confirmed the even and regular thrombus that formed, and its tight clinging to the wall. These favorable findings were reproduced in fifty clinical cases. Eczema and leg ulcers of many years' standing healed promptly; one leg ulcer had a twenty-four year history. The cure was complete with from two to twenty-five injections of the 20 to 40 per cent. solution of sodium citrate. In five cases an ascending chemical phlebitis was observed. It was arrested by proximal constriction or staying in bed. Otherwise this obliterating treatment must not be applied to bed-ridden patients. He warns that it requires skill and practice, but adds that it seems destined to supplant operative measures entirely in treatment of varicose veins.

Diagnosis of Blood Disease.—Freuchen takes a smear of the suspected blood and a smear from a normal subject. Comparison of the two shows up readily the special pathologic features.

Paroxysmal Gastric Hypersecretion. — Biilmann's patient was a man aged 48 who from childhood had had recurring attacks of pain in the stomach, relieved by profuse vomiting of gastric juice. The amount increased with years; at times the constant vomiting kept up day and night for two to four days. A chronic nephritis seemed to contraindicate surgical treatment of the hypersecretion. He was brought moribund to the hospital, the aspect resembling that of cholera. This is Biilmann's second case of fatal hypersecretion—the patients refusing operative intervention. The treatment should be modeled on that for cholera, supplemented by gastro-*enterostomy.*

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UNUNITED FRACTURES[*]

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Ununited fractures are those that have failed to unite by bony union after the period normally required for repair. They may be divided into those of delayed union, and those in a fixed state of nonunion.

Delayed Union.—Delayed union may be defined as a condition in which clinical and roentgenographic examination show that repair is going on slowly although the fracture is still ununited. As the fracture is gently manipulated, varying degrees of solidity and stiffness, and thickening due to the callus, may be noted. The roentgenogram often shows a large amount of callus; in fact, the fracture line itself may be partially obscured by this callus. The bones are generally of normal density, and one would usually hesitate to pronounce these cases ununited fractures from the roentgenogram alone (Fig. 1).

Nonunion.—Nonunion may be said to exist when physical examination and roentgenographic study indicate that the fracture is still ununited and that there is no attempt at repair. The patient may be able to flop the part about at will, and on physical examination a typical false joint is found. On palpation no callus can be felt, and the stiffness and semirigidity encountered in delayed union are absent. The roentgenogram usually discloses an osteoporosis of the fragments with clear cut, often rounded ends, and there is no callus to give the hazy appearance to the fracture area, as in delayed union (Fig. 2). The longer the fracture has been ununited, the more likely it is to be a case of nonunion, but time is not the sole criterion. As will be seen in this series, the average time between the sustaining of the fracture and the operation was six months in cases of delayed union, and two years in cases of nonunion. Practically all cases of nonunion have once been cases of delayed union, and it is at the transitory point or period that definite classification is difficult. But in a group of cases of ununited fracture in which operation is to be performed, a definite classification can usually be made, as the doubtful period generally either has been passed or has not been reached.

In many instances it is difficult to determine why a fracture does not unite. Therefore, in studying these cases, I assigned in each instance, whenever possible, the one outstanding cause of failure to unite, and by tabulating these data obtained certain accurate information. Two hundred and fifty-nine patients with ununited fractures of the shafts of the long bones and of the hips have been operated on at the Mayo Clinic during the six years from Jan. 1, 1919, to Jan. 1, 1925. The tabulated records were divided into those of delayed union, ninety-six cases, and those of nonunion, 135 cases, in the shaft of the bones. The twenty-eight cases of nonunion of the hip have been considered separately except as to end-results.

Ununited fractures, as a rule, occur in healthy, robust persons; constitutional disease, such as syphilis, is practically never responsible. The paradox is encountered in the prompt union of many fractures in the frail, anemic patient with fragilitas ossium, while a single fracture in a normal, healthy man may fail to unite. A pathologic fracture, due to metastatic carcinoma, sometimes unites quickly, although the patient succumbs to the malignant disease.

TABLE 1.—*Summary of Two Hundred and Fifty-Nine Cases of Ununited Fracture*

Males	220
Females	39
Between the ages of 20 and 49 years, per cent.	81
Originally compound, per cent.	35
Originally simple, per cent.	65

Treatment	Per Cent.
Bone grafts	56.3
Plastic	23.2
Removal of sequestrums	13.5
Metal	4.0
Manipulations	3.0

	Delayed Union	Nonunion	Total
Humerus	10	35	45
Ulna	4	6	10
Radius	2	20	22
Radius and ulna	17	14	31
Tibia	52	40	92
Shaft of femur	11	20	31
Hip	..	28	28
Total	96	163	259

SUMMARY OF DATA IN TWO HUNDRED AND FIFTY-NINE CASES OF UNUNITED FRACTURE

There were 220 males and thirty-nine females in this series (Table 1). The ages by decades were: from 10 to 19, sixteen cases; from 20 to 29, seventy-five; from 30 to 39, eighty-one; from 40 to 49, fifty-four; from 50 to 59, twenty-nine, and from 60 to 69, four. In other words, 210 (81 per cent.) of the patients were between 20 and 49 years of age. Patients under 10 years have not been included in the study as I believe that they demand separate consideration. In ninety-three (35 per cent.) of the cases, the fractures were originally compound; in 166 (65 per cent.), simple.

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[*] From the Section on Orthopedics, Division of Surgery, Mayo Clinic.

[*] Read before the Section on Orthopedic Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

In ninety-six cases (35 per cent.) the condition was classified as delayed union, of which thirty-two had been originally compound and sixty-four, simple. There were in reality 163 cases of nonunion, but since twenty-eight of these were fractures of the hip, it was deemed unfair to include them in the comparison of certain phases of the question in which the shafts of the bones were concerned, as operation was not performed in cases of delayed union of the hip.

Table 2—*Bone Grafts*

	Delayed Union				Nonunion				Total Traced	Total Cured
	Cases	Cured	Failed	Not Traced	Cases	Cured	Failed	Not Traced		
Humerus	4	4			26	20	5	1	29	24
Ulna	1		1		2	2			3	2
Radius	2	2			15	12	2	1	16	14
Radius and ulna	10	10			6	4	1	1	15	14
Tibia	25	24	1		25	22	1	2	48	46
Femur	1	.		1	8	5	3		8	5
Hip					22	16	5	1	21	16
Total	43	40	2	1	104	81	17	6	140	121

Bone graft was done in 147 of 259 cases (56 per cent.); delayed union 42 cases traced, 40 cured (95.2 per cent.), nonunion, 93 cases traced, 81 cured (82.7 per cent.); ununited (combined), 140 cases treated, 121 cured (86.4 per cent.)

All of the 259 patients were treated surgically. In 147 (56.2 per cent.), some form of the bone graft was used, usually the massive graft (Table 2). In the cases of delayed union, ninety-six in all, a graft was used in forty-three. The end-result was ascertained in forty-two; forty patients (95.2 per cent.) were cured. In 163 cases of nonunion, the bone graft was used in 104. Eighty-one (82.6 per cent.) of the ninety-eight patients traced were cured. In 140 traced cases of both delayed union and nonunion, and in which the bone graft was used, 121 patients (86.4 per cent.) were cured. In twenty-two cases of nonunion of the hip, bone grafts were used, usually from the fibula; twenty-one patients were traced, sixteen of whom were cured, bony union having resulted. In fifty-five cases, exclusive of the hip, thirty-two of delayed union, and twenty-three of nonunion, some form of plastic operation was carried out to reshape and fit the bony surfaces (Table 3), gaining as much contact of fresh healthy bone as possible and maintaining this by whatever means was considered best, such as beef-bone plates, beef-bone screws, catgut, or any absorbable material other than an autogenous or homogenous bone graft.

Table 3—*Plastic Operations, Beef-Bone and So Forth*

	Delayed Union				Nonunion				Total Traced	Total Cured
	Cases	Cured	Failed	Not Traced	Cases	Cured	Failed	Not Traced		
Humerus	2	2			4	3	1		6	5
Ulna	2	1	1	..	4	2	1	1	5	3
Radius					1		1	..	1	..
Radius and ulna	5	5		.	5	3	1	1	9	8
Tibia	19	17		2	5	5			22	22
Femur	4	3	1		4		3	1	7	3
Total	32	28	2	2	23	13	7	3	50	41

Delayed union, 93.3 per cent. cures; nonunion, 65 per cent. cures; ununited (combined), 82 per cent. cures

Fifty of these patients were traced, and forty-one (82 per cent.) obtained union. Ninety-three per cent. of the patients with delayed union were cured, whereas only 65 per cent. of those with nonunion were cured, a poor showing when compared to 82.6 per cent. of cases in which the bone graft was used. Five of the patients with fracture of the hip were not considered satisfactory subjects for bone grafting, owing to absorption of the neck of the femur. They were therefore subjected to the plastic operation of either Brackett or Whitman, making a total of sixty plastic operations (23.1 per cent. of the total). Satisfactory functional results with good weight-bearing properties were obtained in these selected cases.

In 13.5 per cent. of the total series, an operation was performed to remove sequestrums, plates that were ineffectual in septic beds, and foreign bodies, and to curet sinuses, and so forth. In ten cases (4 per cent. of the total), a metal plate or band was used. It is noteworthy that nine of these were fractured femurs. In nine (3 per cent. of the total), manipulations were done to correct deformities in delayed union with malposition.

ETIOLOGY

The outstanding point noted in the records of cases of ununited fracture is the great number of severe contusing, crushing, twisting, devitalizing direct injuries that were sustained at the accident. The causes are tabulated under the following headings: (1) severe injuries, associated with compound fractures; (2) severe injuries, associated with simple fractures; (3) inadequate fixation; (4) poor reduction, with consequent malposition, interposition of muscle, and so forth; (5) metal plates perhaps improperly applied, and (6) indeterminate (Table 4).

Table 4—*Etiology (Exclusive of the Hip)*

	Severe Injury Associated with Compound Fracture		Severe Injury Associated with Simple Fracture		Inadequate Fixation		Poor Reduction, Malposition		Metal		Indeterminate	
	Nonunion	Delayed Union	Nonunion	Delayed Union	Nonunion	Delayed Union	Nonunion	Delayed Union	Nonunion	Delayed Union	Nonunion	Delayed Union
Humerus	15	2	5	2	9	5	..	..	2	1	4	..
Ulna	.		2	3	3	1		..	..	..	1	..
Radius	4		8	1		1	6		2	..	..	.
Radius and ulna	5	5	5	9	..	..	2	2	..	..	2	1
Tibia	21	7	6	10	4			15	3	1	6	19
Femur	2	1	3	2		.	8	7	1	1	6	
Total	47	15	29	27	16	7	16	24	8	3	19	20
	62		56		23		40		11		39	
	118				63							

In 118 of the 231 cases, the single outstanding etiologic factor was the severe direct injury, so severe that there was no question as to its importance in the devitalization of the tissues. Crushing injuries, and twisting of the extremity in a wheel or belt, were common. Sixty-two of these severe injuries were associated with compound fractures, and fifty-six with simple fractures. Forty-seven compound fractures were encountered in the cases of nonunion, whereas only fifteen were in the delayed union group, showing that severe injuries with compound fractures are prone to lead to nonunion. A severe injury with a simple fracture appeared responsible in fifty-six cases of ununited fracture, twenty-nine in the nonunion, and twenty-seven in the delayed union group. In twenty-three cases inadequate fixation seemed to play a part, sixteen in cases of nonunion, and seven in cases of delayed union. Poor reduction, due to various causes, often clearly no fault of the surgeon, with malposition of the bone and interposition of muscle or fascia, and so forth, seemed responsible for the condition in forty cases: sixteen of nonunion and twenty-four of delayed union. The introduction of metal in the form of a plate, bands or wire was considered to be the cause in only eleven cases; it was usually due to faulty placing of the metal rather than to its presence. In thirty-nine cases, I was unable to pick out any one factor prominent enough to be charged with the cause; in a small number of this group the fracture simply refused to unite with no apparent reason, and in others sepsis following operation may have been the factor; in fact, a number of indeterminate causes seemed more or less responsible.

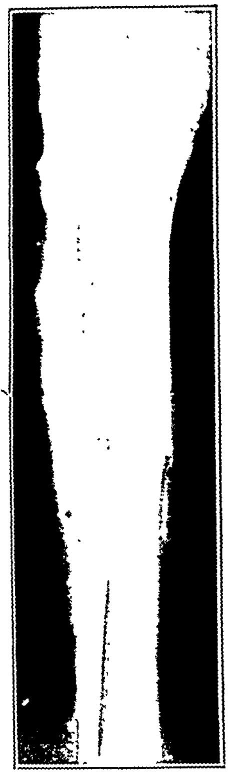

Fig. 1.—Delayed union of tibia and fibula.

It is of interest that approximately 50 per cent. of the entire group of patients had been the victims of severe direct injury and that more than half of these (25 per cent. of the total) had been associated with compound fractures. Of the entire number, ninety-three (35 per cent.) were originally compound fractures, but some of these were not associated with especially severe injuries. I believe that the trauma was much more responsible for the condition than the compound fracture, for many of the wounds healed immediately. Nevertheless, compound fractures are usually associated with severe trauma. The insult and damage to the tissue are so great that, no doubt, nerves are devitalized, and blood vessels injured and destroyed, with a consequent sluggishness on the part of the bone and tissues to respond to call for repair. It often happens that, after the normal period for repair, every one becomes concerned, and the frequent examinations and manipulations to see whether any progress is being made may well be a factor in the persistence of the ununited fracture.

Table 5.—*Site of Fracture*

	Upper Third		Middle Third		Lower Third		
	Nonunion	Delayed Union	Nonunion	Delayed Union	Nonunion	Delayed Union	Total
Humerus	9	2	16	6	10	2	45
Ulna	5	2	1	..	..	2	10
Radius	..	..	5	2	15	..	22
Radius and ulna	1	2	8	10	5	5	31
Tibia	4	5	16	18	20	29	92
Femur	8	2	9	6	3	3	31
Total	27	13	55	42	53	41	231
	40		97		94		

The local blood supply to the fragments is doubtless significant. The nutrient vessels enter in the middle third of the shaft and may be damaged at the time of the accident. In the 231 ununited fractures of the shaft of the long bones (Table 5), forty were in the upper third, ninety-seven in the middle third, and ninety-four in the lower third. This loses some of its significance, however, when it is recalled that most fractures occur in the middle and lower thirds of the long bones. Sixteen cases of nonunion of the humerus were in the middle third, ten in the lower third, and nine in the upper third. There were five cases of nonunion of the ulna in the upper third, one in the middle third, and none in the lower third. In the radius, there were no fractures in the upper third, five in the middle third, and fifteen in the lower third. In the radius and ulna, double cases of nonunion, one was in the upper third, eight in the middle third, and five in the lower third. In the tibia, four fractures occurred in the upper third, sixteen in the middle, and twenty in the lower third. In the femur eight fractures occurred in the upper third, nine in the middle third, and three in the lower third. In one fourth of the cases (Table 4), inadequate fixation, or a poor reduction with malposition was the most prominent etiologic factor.

In the cases of fracture of the hip, the outstanding cause was inefficient treatment in every case, so far as could be determined. In many instances, no diagnosis had been made, because the patient had not called a physician, or because the physician did not find signs sufficient to establish a diagnosis of fracture, and roentgenograms were made too late. In other instances the patient had refused to submit to the protracted fixation advised. None of the twenty-eight patients with fracture of the hip gave a history of anything approaching adequate reduction and fixation. Undoubtedly many impacted fractures of the hip unite without treatment, but if they break down under the "no fixation" or "let alone" method, they go on to nonunion.

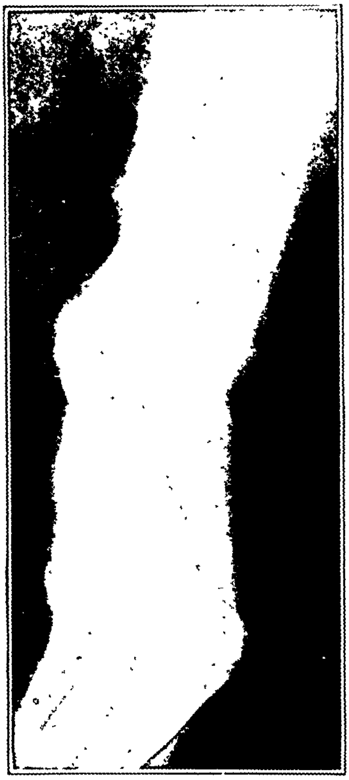

Fig. 2.—Typical nonunion in the lower third of the humerus.

As I have stated, general or constitutional causes are not important factors in the etiology of ununited fracture. For many years, surgeons have given, empirically, various drugs, hoping to induce union in ununited fractures; even the so-called glandular therapy has not been overlooked. The study of calcium metabolism is fraught with many difficulties. Rarely is there a deficiency in calcium intake, but there may be a definite lack of assimilation, or of ability to deliver it properly to the site of fracture. The information gained from the important work on calcium and phosphorus in connection with rickets, instigated chiefly by the work of McCollum[1] and his co-workers, has been applied in the study of fractures. It has been found that growth and proper bone deposits do not occur in the rachitic child until the product obtained by multiplying the calcium and phosphorus content in milligrams for each 100 c.c. of blood serum reaches a certain level. The normal ratio is accepted as about 10 mg. of calcium for each 100 c.c. of blood serum, and approximately 3.5 mg. of phosphorus for each 100 c.c. of blood serum, their product being 35 mg., which is considered approximately normal. If there were only 8.5 mg. of calcium and 3.1 mg. of phosphorus the product would be 26.3 mg., and probably the fracture would not unite. Petersen[2] has applied this finding to fractures, believing that unless this product reaches 35 the fracture will not unite.

Several hundred tests of this hypothesis have been made in this series of cases, usually several being made on each patient subjected to the test. It is, however, difficult to make any definite deductions. The test is very delicate, and errors are likely to occur. Any departure from the normal must be checked often, and special precautions are necessary to eliminate errors. In the carefully controlled cases when the product was abnormally high, union was rapid, and when it was low, union was slow. When there was a low product a certain degree of osteoporosis was noted in the roentgenogram; we know this to be detrimental to rapid repair. In the cases of nonunion of long standing when callus formation was at a standstill, there was rarely any departure from the normal. The test should be made in each case of ununited fracture, if practicable. If the calcium and phosphorus content of the blood can be raised by any means, it is more likely that union will be more readily obtained in such cases. Proper diet and medicine, such as cod liver oil with phosphorus and calcium lactate, may help. Recent renewed interest in the extract of the parathyroid gland as a therapeutic agent is of interest.

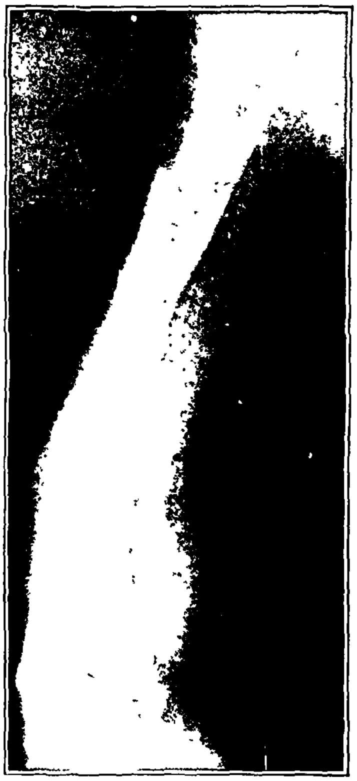

Fig. 3 (same case as Figure 2).—Massive graft fourteen months after application, showing absorption of beef-bone screws.

TREATMENT

The bone graft, usually the massive type[3] (Fig. 3), was used in more than half of this series of cases, in a little less than half of the cases of delayed union, and in 64 per cent. of those of nonunion. In view of the great value of the bone graft and the success following its use, one would expect it to be used even more often, but the graft must be applicable to the individual case; the case must not be made to conform to the method. In certain situations, the bone graft is clearly the method of choice, in others it is not. In this series of cases, operations were performed not only to cure the condition but merely to pave the way for future reconstructive surgical treatment, in certain cases. As an illustration, thirty-five patients were operated on in an attempt to clean up a septic condition. In studying these cases I was somewhat surprised to find that more metal plates had been used for ununited fracture of the shaft of the femur than bone grafts. This is explained by the great tendency for the thigh to bow after operation and the consequent urge to the surgeon to apply firm internal fixation. In nine cases of fractured femur, metal plates were applied after the fragments had been exposed and the ends fitted under considerable tension to overcome shortening. This operation was successful in eight cases. With a short cast on the thigh, under traction by aid of a Thomas splint fastened to the foot of the bed, it is easier to maintain position without bowing, provided the extension is maintained and thus the autogenous bone graft may be substituted for the metal plate. However, the good results obtained with the metal plate make one wonder whether the bone graft is really imperative. The chief objection to the metal plate is that it is a foreign body; but when it is well protected by a thick layer of muscle, as in the thigh, it rarely gives trouble. It can be removed after union has been secured; this is explained to the patient, and its removal is more or less optional.

The plastic type of operation was successful in cases of delayed union, but less successful in cases of nonunion. Barring exceptional instances, the bone graft is without doubt the best means of treating a nonunion.

SUMMARY

Fractures produced by direct injury, whether simple or compound, in which the trauma is sufficient really to injure and devitalize the tissues, are more prone to become ununited than are those in which the trauma is not so severe. Usually the trauma is most severe with compound fractures; this was true in the cases of this series, and accordingly there were more cases of nonunion than delayed union with this type of compound injury. General systemic conditions were negative from clinical study alone. Local causes are far more significant in the development of ununited fractures than general or systemic causes, but the chemical analysis of the blood to determine the calcium and phosphorus content was suggestive in a small number of cases. This test is a delicate one, and abnormal readings must be carefully checked by further tests before being accepted. If the calcium and phosphorus content of the blood serum could be raised above normal for any length of time, it is possible that, in cases of delayed union, union might be induced, but cases of fixed nonunion would probably not be benefited.

The bone graft is of the greatest service, and without it, it would not be possible to obtain cures in 93 per cent. of delayed union, and in 82.6 per cent. of nonunion, or in 86.4 per cent. of cases of ununited fracture when the two are grouped together. The bones in cases of delayed union are more easily induced to unite than in cases of nonunion, as shown by the fact that with the plastic type of operation there were 93 per cent. of cures in cases of delayed union, whereas in cases of nonunion there were only 65 per cent. of cures. The distinction between delayed union and nonunion should be borne in mind in treating ununited fractures. In this series, certain fractures were considered as delayed unions one and one-half years after the accident, whereas others in the hip were considered as nonunions after three months, and in certain fractures of the shaft after four months. The average duration of the nonunions before operation was two years. By recognizing this difference, and by putting forth greater effort and more care in the planning and execution of operations for nonunion, a higher percentage of cures has been obtained than heretofore.

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[1] McCollum, E. V.; Simmonds, Nina, et al.: Studies on Experimental Rickets, VIII, The Production of Rickets by Diets Low in Phosphorus and Fat-soluble A, J. Biol. Chem. **47**: 507-527 (Aug.) 1921.

[2] Petersen, H. A.: A Clinical Study of Ununited Fractures, with Special Reference to the Inorganic Bone-Forming Elements in the Blood Serum, J. Bone & Joint Surg. **22**: 885-901 (Oct.) 1924.

[3] Henderson, M. S.: Nonunion in Fractures: The Massive Bone Graft, J. A. M. A. **81**: 463-468 (Aug. 11) 1923.

ABSTRACT OF DISCUSSION

Dr. P. D. Wilson, Boston: Dr. Henderson has made two essential points, one with reference to treatment, and the second with reference to etiology. In etiology, he makes the point of severe violence, and it is interesting to see what a high percentage of compound fractures have entered into the production of these nonunions. It is a much higher percentage than I expected to find. The theory finds a certain amount of support. However, comminuted fractures are, as a rule, thought to be the result of severe violence and usually at least we expect that they will unite readily. Then, too, often in an ununited fracture the distal fragment is greatly atrophied, and that seems to lend support to the theory that circulatory change is present. The only difficulty here is that atrophy of itself means that there must be some circulation, or the atrophy could not take place. A dead bone remains dense; it does not atrophy and lose lime salts. I think that there is about the usual incidence of poor fixation and reduction entering into these nonunions. Too much traction often leads to nonunion. Dr. Henderson has had a very high percentage of cures, and I compliment him. The main thing we have to do about treatment is to decide early in the treatment of acute cases whether they are going to come to nonunion. Dr. Henderson's figures show clearly that the longer nonunion persists the more difficult it is to cure by any form of operation. If at the end of three or four weeks there is more mobility than one would expect, and there exists frank crepitus, even though we may say that the case is going to be only one of delayed union, it is worth while to anticipate the possible disastrous results of nonunion by operating. The chance of preventing nonunion is so great as to counterbalance the risk of operation, when properly done. The septic ununited fractures present a great problem from the surgical standpoint. Many of them come to amputation. I think we are rather prone to adopt a radical form of treatment there, when it is possible often to do something conservative. I have had some experience in doing the so-called plastic operation, as Dr. Henderson calls it. If that is done and the wound left wide open, and if the Carrel-Dakin treatment is started immediately, the danger is not great. Many of those cases can be conserved and saved which now go on to nonunion.

Dr. W. C. Campbell, Memphis, Tenn.: Ununited fractures are more common today than before, because we have more fractures to deal with. I agree with Dr. Henderson that severe trauma is an important etiologic factor. Multiple fractures might be added to the list of causative agents. In many cases, several bones are fractured, as in automobile accidents. In many cases we often find union at two or three points, and perhaps at one point there will be no union. This is a question of the demands of nature on callus output. Another element from which much damage may accrue is roentgen-ray interpretation in inexperienced hands. Frequently the physician will obtain a picture that is not absolutely satisfactory to him, and he begins to manipulate, adding insult to injury. He having failed, the patient is taken to a surgeon, who does an open operation, and adds further insult by tearing the periosteum and separating the bone from the soft parts. In the treatment of ununited fractures, I regard the massive graft as the method of choice. This cannot always be accomplished without the aid of hardware. Sometimes the graft must be supplemented by silver wire to maintain solid fixation, particularly in the femur, where there is extreme osteoporosis. The operation must be undertaken with a great deal of care. It requires a considerable amount of experience. It is a very dangerous operation, particularly in the upper third of the femur, and should not be undertaken lightly. Osteoporosis in ununited fractures, I have attempted to treat by massage and physiotherapy, but when nonunion was present I have never been able to produce the slightest change in the bone by any such treatment. In doing the operation, many operators tear the periosteum loose from the entire circumference of the bone. This should be avoided. We should conserve the circulation. I have also transplanted, in addition to the massive graft, spongy bone wherever it was available. I have found that this is a very active proliferative agent and I believe it will aid in inducing union.

Dr. Walter G. Stern, Cleveland: I quite agree with Dr. Henderson in many of his points, but I am going to ask him two questions to clear up some of the things that have arisen in my mind. He does not tell us whether he distinguishes in his treatment between the group of delayed union and the group of real nonunion. I believe it is an axiom in surgery that a majority of the cases of delayed union of from three to six months' standing will heal when the part is actively used. In these cases, walking casts and walking caliper splints have yielded very good results in my own hands. But other forms of treatment have also proved of benefit. In several cases of severe comminuted fractures in which the delayed unions were treated by stimulating doses of the roentgen ray, given once in three weeks or once a month, consisting approximately of one tenth of a skin unit, union occurred rather readily. One case of delayed union of the humerus, for which we made a splint with a joint at the elbow, came to good, firm, bony union after three treatments with the roentgen ray. I agree with Dr. Wilson that the ordinary compound fracture does not often result in nonunion. Dr. Henderson did not especially ascribe any particular form of compound fracture as the cause of this nonunion, nor does he mention that the compound fractures quoted in his tables were extensively operated on, but I believe that Dr. Campbell has struck the keynote in this work. When one operates in these cases, one must not tear away the periosteum and do great damage to the tissues in the neighborhood, and it seems to me, from the methods that I have seen and read about, some of which are advocated by members of our own section, that the violence of the treatment and the infection often following early operative intervention in compound fracture is more often the cause of the final nonunion than the compound fracture itself.

Dr. Frank Warner, Columbus, Ohio: My limited experience has forced me to the conclusion that the severe injuries have resulted more frequently in delayed union, if not in final nonunion. In some of these cases in which there has been such severe injury at the time of operation, when forced to this operation by lack of union, I have found the interposition of muscle or of fascia to have been responsible for its production. One of the speakers referred to the more frequent prevention of union in the presence of septic infection. This is doubtlessly true. Yet sometimes I have been surprised at the rapidity with which union took place, even in the presence of severe infection. Too much tension produced by Thomas' splint seemed in one case to be a responsible factor. Poor fixation has long been regarded as a cause of nonunion, and even with poor fixation sometimes I have seen rapid union. With the method that has been in use for a good while, which was referred to by Dr. Stern—that of walking in these cases of nonunion and in that way producing union—it would make one begin to doubt whether the poor fixation was always the responsible cause, or whether it was a simple coincidence. In the operation in these cases, it seems to me that the use of live bone is the preferable method, and this live bone placed in a way that will secure good constant contact with the bone with which it is placed. Not only that, but the ends of the bones must be so thoroughly cleared back that union will occur by the aid of the new bone that is placed in this position.

Dr. M. S. Henderson, *Rochester, Minn.:* Many points mentioned in the discussion will probably be cleared up on reading the paper. I did not have time to cover them all in presenting it. I felt quite confident that the high percentage of compound fractures would surprise many. We can largely disregard the compound part of the injury. After all, it was the injury itself, the severe type of injury, with the consequent trauma to the bone, blood vessels, nerves, and all, that was the real factor. Many of these compound fractures healed without any infection. Dr. Wilson mentioned the high percentage of cures that we have. We have increased our percentage of cures by paying attention to technic. My respect for resistance and difficulty in handling nonunions has increased a great deal in the last ten years. We must approach them with care as one would a worthy foe, and we prepare in every way to handle the situation. It is the differentiation into the two groups of delayed union and nonunion that has enabled us to increase our percentage of cures. We recognize the bad cases and are more careful with them. I did not mention, in reading my paper, the hip cases. The etiology in every case, as far as I could make out, was that no adequate treatment had been instituted early. Dr. Stern mentioned the treatment of the delayed union and nonunion by conservative measures; that is, the use of weight bearing, etc. Those may all be used, but in the paper I drew attention to the fact that the delayed unions could be induced to unite more easily than the nonunions, and it is in the former that good results are obtained by conservative measures. The mention of the roentgen-ray treatment is interesting, but the roentgen ray has been advocated in so many different forms of diseases and praised generally much more than it deserves that I am inclined to believe that any credit given the roentgen ray in the treatment of fractures should be looked on at least with suspicion.

Psychologic Tests for Students.—Psychologic tests were recently made of Harvard and Radcliffe college students by Dr. Abraham A. Roback of Harvard University. The tests were based on relative speed in observation, deduction, mental application, and interpretation. It was found that the girls scored higher than men, the Harvard men showing an average of 50.5 per cent. in tests given 107 students, while the Radcliffe girls had a 55 per cent. average on tests of thirty-seven girls. Dr. Roback stated that the higher mental average shown by the girls is to be explained by the fact that greater discrimination is exercised in sending girls to colleges.

RECKLINGHAUSEN'S DISEASE WITHOUT TUMOR FORMATION

INCOMPLETE OR ABORTIVE FORMS OF THE DISEASE *

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AND
J. J. ELLER, M.D.
NEW YORK

In 1882, Recklinghausen published a description of the disease now called *neurofibromatosis* cutis or fibroma molluscum multiplex. This clinical entity is so well known and so well described in textbooks and monographs that a description of the usual forms of the affection is superfluous.

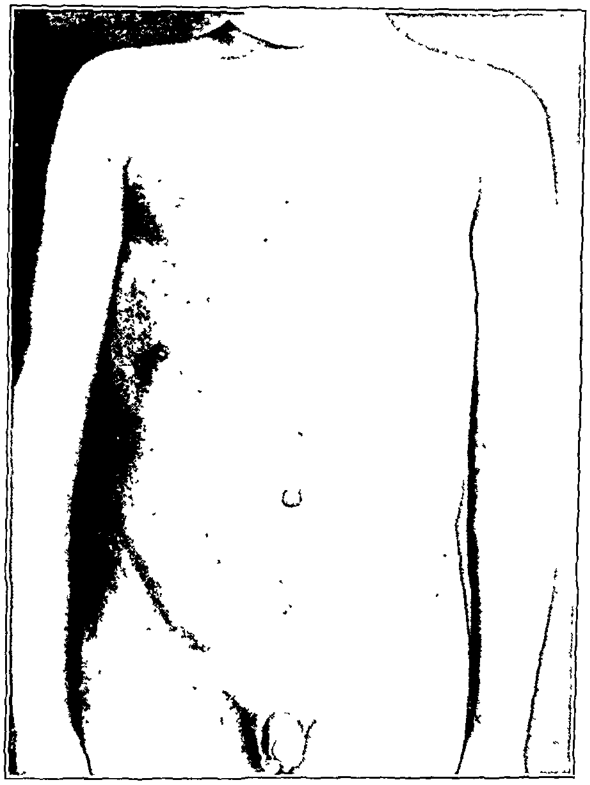

Fig. 1 (Case 3).—Eruption devoid of tumors.

Recklinghausen's work was based on well developed examples of the disease, in patients who presented the usual characteristic tumors, nevi, lentigines, large pigmented areas, and small bluish macules. His monograph made no mention of anomalous and incomplete forms of the disease, such as those in which the characteristic pigment lesions exist, but which differed from the "classic" forms in that there is a complete absence of tumors or other elevated lesions, in the skin or beneath the skin.

Attention was first directed to this incomplete or abortive form by Parkes Weber[1] in 1905, in which year he presented such a patient before the Dermatological Society of London. He described this case fully in an article in 1909. W. B. Trimble[2] reported a similar instance in an article published in 1911, and in 1921 Oscar Levin[3] also called attention to the subject.

The presentation before various dermatologic societies of patients who exhibited only cutaneous pigmentations has occasioned discussions as to the propriety of naming such cases Recklinghausen's disease.

Obviously, an eruption devoid of visible or palpable tumors can be called neither neurofibromatosis nor molluscum fibrosum. Cases of Recklinghausen's disease manifested only by pigmentation are most apt to occur among families in which one of the parents and the offspring are affected. It is well known that in a certain [illegible] of cases the malady is hereditary, and often [illegible] of a family are victims of the disease. One of our [illegible] a woman who had

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* Read before the Section on Dermatology and Syphilology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Weber, F. P.: Cutaneous Pigmentation as an Incomplete Form of Recklinghausen's Disease, Brit. J. Dermat. **21**: 49, 1909.

[2] Trimble, W. B.: Remarks on Neurofibromatosis, New York, M. J., Feb. 25, 1911.

[3] Levin, O. L.: Recklinghausen's Disease: Its Relations to the Endocrine System, Arch. Dermat. & Syph. **4**: 303 (Sept.) 1921.

many typical tumors and pigment spots, while her young daughter, whose skin was free of visible or palpable tumor formations or other gross cutaneous lesions, nevertheless exhibited countless freckles all over the trunk, together with large café-au-lait spots and bluish macules of varying size and outline. The *mother had a frank neurofibromatosis cutis, while the* daughter's lesions were the early manifestations of Recklinghausen's disease. True, the daughter might or *might not develop tumors and other lesions of the dis*ease, later in life; but the diagnosis is made at the moment of presentation, without regard to probable or possible future developments in the course of the affection.

The fact that several colleagues of ripe experience disagreed with this view led us to consult the literature on the subject, with the result that many references tending to substantiate Weber's *original contention were brought to* light.

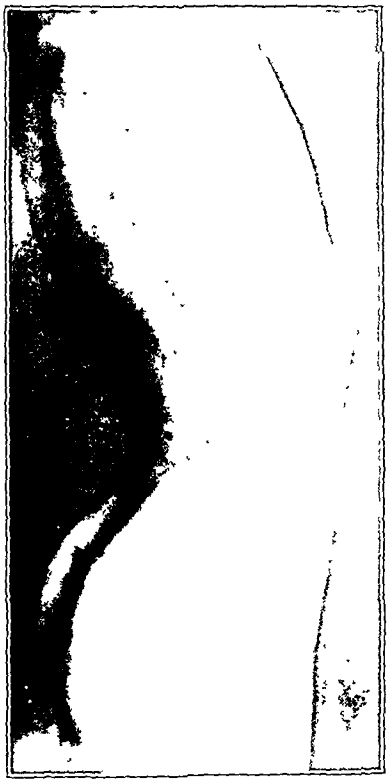

Fig. 2 (Case 3).—Eruption devoid of tumors.

REVIEW OF THE LITERATURE

Darier[4] states that numerous incomplete cases occur in which either the tumors of the nerves or the pigmentations, etc., are absent. The pigmentations are of such characteristic appearance, especially as regards their distribution on the *trunk, that when they are the only* symptoms present, a diagnosis of Recklinghausen's disease is sometimes justified.

Ormsby quotes Parkes Weber,[5] who believes, in common with a few others, that there are anomalous cases of Recklinghausen's disease in which the pigmentary are the only changes, at least for certain periods of time. In the case as originally reported by Weber, only pigment was present; in the later report of the same patient, tumor formations had begun. Graham Little[6] reported a typical case in which the pigmentations preceded the tumor formations by six years.

Andueza[7] demonstrated a woman, aged 26, with subcutaneous tumors and pigment spots on the trunk. There were six brothers and sisters. The skin of the mother and that of the grandfather presented only pigmentations; there were no tumors. *One sister of the patient had only subcutaneous* tumors.

Adrian and Huegel[8] reported two cases of the dis*ease with irregular disseminated patches of pigmenta*tion, without tumors or nerve involvement. One of the patients subsequently developed about a dozen tumors the size of peas, situated on the chest and thighs.

Acuna and Bazon[9] reported two examples of the disease; one of these was typical. i[illegible] aged 12; the other, a boy, aged 11, had pigmentations as the only symptoms of the affection.

Roederer[10] demonstrated a woman, aged 49, with typical neurofibromatosis cutis. The patient's daughter presented numerous café-au-lait pigmentations, but the skin was free of tumors. Both patients had evidences of suprarenal disturbances.

Uberschar[11] reported the case of a sailor, aged 17, with typical neurofibromatosis. The pigmented spots appeared in early childhood, but the tumors first began to develop only in the past two years.

Leschke[12] described a case in a woman, aged 32, in whom many pigmented spots began to appear on the body at the age of 5, the number of spots increasing rapidly especially in the last five years. These spots appeared in the form of macular and bandlike pigmentations of café-au-lait color. Roentgenograms revealed hypertrophy of the suprarenals. There was a mild form of psychic aberration, manifested as infantilism. The patient's eruption was considered in the light of a peculiar variant of Recklinghausen's disease, representing the type of lesions in which the designation neurofibro*matosis or fibroma molluscum mul*tiplex was not adaptable. The name Recklinghausen's disease was con*sidered to be appropriate, for it* embraced the varied clinical symptoms which that condition may manifest.

Hoekstra[13] stated that neurofibromatosis is associated with abnormal *pigmentations in more than half the* cases described in the literature, and that in those of the familial type, *the pigmentations alone should be* interpreted as being equivalent to Recklinghausen's disease.

Langer and Gumpert[14] recently published a study of four cases, each of which demonstrated the different stages of development of the affection. The first patient, a girl, aged 21, presented only pigmentations of different varieties—yellowish freckles, brownish and café-au-lait spots, and dark brown *mole-like lesions scattered on the* face and trunk. There were no "blue spots" and no tumor formations. Similar examples have been reported by Thibierge, Vignolo-Lutati, Schall, Audry, Salomon, Lange and Jadassohn. In Hirsch's patient, pigmentations were present since birth, but tumors appeared only at the age of 14. In Feindl's patient, a woman whose skin was studded with pigment spots, the first tumor appeared after childbirth, the mother being 18 years old at the time. In Thibierge's patient, a girl, aged 22, only the characteristic pigment spots were present, but she also exhibited the mental and physical stigmas of the disease. Vignolo-Lutati's patient had the "blue spots" but no tumors. One of Schall's patients, a boy, aged 6, had only widespread pigment spots of characteristic appearance and distribution. Audry reported the case of a man with well developed neurofibromatosis cutis, while his 15 year old daughter presented only freckling and pigmentation scattered over the body.

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[4] Darier: Dermatol[illegible] by [illegible]. Pollitzer, Philadelphia, Lea and Febiger, 1920, p. 668.

[5] Weber, F. P.: Brit. J. Dermat. **17:** 226, 1905; Cutaneous Pigmentation as an Incomplete Form of von Recklinghausen's Disease, **21:** 49, 1909.

[6] Little, E. E. G.: Brit. J. Dermat. **20:** 413, 1908.

[7] Andueza, P. H.: A Case of von Recklinghausen's Disease with Endocrine Disturbances, Med. ibera. **16:** 241, 1922.

[8] Adrian, C., and Huegel, G.: The Abortive Types of Recklinghausen's Disease, Ann. de dermat. et de syph. **7:** 152 (May) 1919.

[9] Acuna and Bazon: Arch. latino-americ. de pediat. **16:** 487, 1922.

[10] Roederer, J.: Bull. Soc. franç. de dermat. et de syph. **2:** 17, 1922.

[11] Uberschar: Berl. dermat. Gesellsch., Sitting 5, Feb. 14, 1922.

[12] Leschke, E.: Med. Klin. **18:** 911, 1922.

[13] Hoekstra, G.: Virchows Arch. f. path. Anat. **237:** 79, 1922.

[14] Langer and Gumpert: Arch. f. Dermat. u. Syph **144:** 277 (Aug.) 1923.

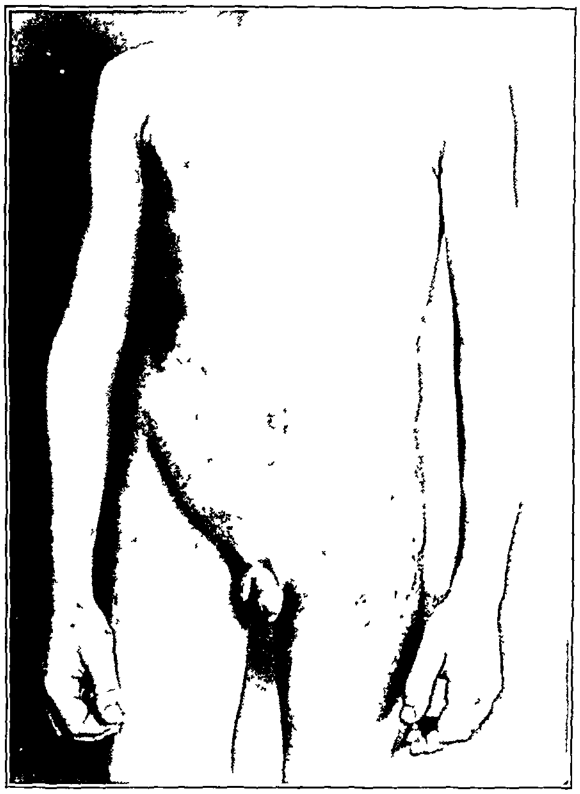

Fig 3 (Case 2).—Single tumor on left scapula.

In Langer and Gumpert's second patient, a man, aged 23, a further stage of development was manifested by the presence of the characteristic "blue spots," together with barely palpable papular lesions of bluish tint. Three months after the patient came under observation, two additional papular lesions made their appearance, accompanied by intense pain. In their third patient, a woman, aged 19, there were countless small papular lesions, wartlike prominences and different varieties of pigmented nevi, together with many café-au-lait spots and depigmented areas, scattered over the trunk and extremities. In the fourth patient, a man, aged 47, the lesions were those of a typical, well developed and generalized neurofibromatosis cutis, as originally described by Recklinghausen. This patient also presented an unusual complication in that he had a nodular lesion of the urethra, causing retention of urine.

According to Adrian,[8] two symptom complexes characterize Recklinghausen's disease; the first comprises the cases with multiple cutaneous fibromas and neurofibromas, with pigmentations; the second, cases presenting hematolymphangiomas, lipomas, neurolipomas, tufts of hair growing on isolated tumors, atrophies, cutis laxa, etc., but especially the so-called "blue spots." These are level or barely elevated, lentil-sized, bluish pigmentations, beneath some of which may at times be felt little miliary tumors; the color of these spots fades under pressure. Adrian is inclined to regard these blue spots as forerunners of cutaneous fibromas.

In view of the many recorded examples of Recklinghausen's disease occurring without tumor formations, characterized chiefly by the appearance of pigmentations having a peculiar distribution and color, usually of hereditary and familial type, it would seem appropriate to regard this as a clinical variety of the affection, and to recognize it as an abortive or incomplete form of the disease.

REPORT OF CASES

Through the courtesy of Dr. J. G. Hopkins of Columbia University College of Physicians and Surgeons, we are enabled to present three cases of Recklinghausen's disease, occurring in a father and two sons. There were no other children. The father exhibited a well developed eruption of tumors, nevus-like formations and almost generalized freckling of the skin; the older son showed scattered café-au-lait pigmentations, with only a single small tumor on the trunk; while the younger son was an example of the abortive or incomplete variety of the affection, in that his skin presented no lesions other than pigment spots.

Case 1.—C. I., a man, aged 50, married, a candy maker, father of two boys, presented an eruption consisting of a variety of lesions. The most prominent of these were numerous tumors, varying in size from one-fourth inch (6 mm) to 1 inch (25 mm) in diameter, distributed irregularly over the trunk and extremities. Their consistency ranged from quite soft lesions to tumors presenting considerable resistance to the palpating finger. The characteristic button-hole sensation was elicited on pressing some of these soft tumors. Nearly the entire cutaneous surface was covered by innumerable pigmented macules. These for the most part appeared to be ordinary freckle-like macules, very profusely distributed, more especially on the trunk and thighs. They were chiefly dark brown, with here and there larger macules of café-au-lait color. There were no "blue spots." The eruption first appeared at about the age of 5. Subjective symptoms were absent and the personal history was negative. There was no history of Reckinghausen's disease in any of the patient's

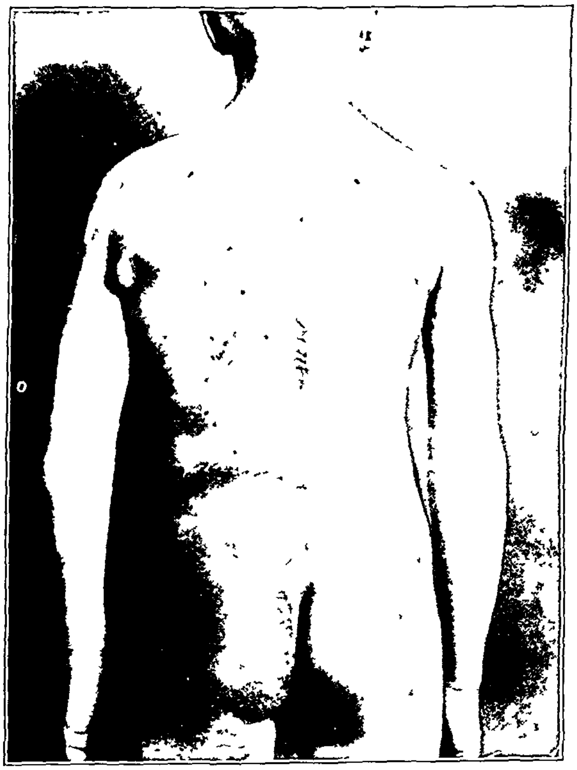

Fig 4 (Case 2)—Single tumor on left shoulder.

ancestors. The genital organs and the endocrine gland functions were apparently normal. There was no defective mentality.

Case 2.—L. I., a boy, aged 11, elder son of Patient 1, had many scattered light brown freckles on the neck, trunk and extremities, together with a number of large café-au-lait spots. On the left buttock and thigh he presented a dark brown, well defined pigmented nevus, about 10 inches in diameter. The surface was smooth, and the patch was not elevated. These pigmentations had been present since birth. There were no "blue spots." On the outer aspect of the left scapula there was a soft, elevated tumor about 1 inch in diameter, which appeared at the age of 8. On pressing down on this lesion, one could elicit the peculiar hernia-like sensation characteristic of this type of tumor. There were no other tumors on the skin. The patient was in good health and the mentality was quite normal; in fact, the boy was unusually bright. The melanotic lesions on the skin first appeared at about the age of 3. The boy had suffered since infancy from lateral curvature of the spine, which was corrected by operative measures at the age of 8. The testes were undescended.

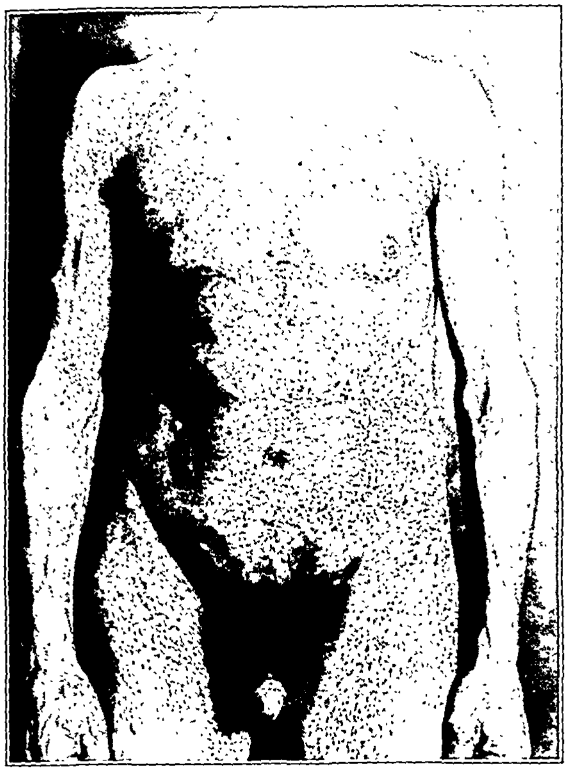

Fig. 5 (Case 1).—Front view of patient.

Case 3.—C. I., Jr., a boy, aged 9, younger brother of Patient 2, presented lesions that consisted only of freckles. There were many small pigmented lesions on the neck, trunk and extremities, of light brown, together with a few larger café-au-lait macules of irregular shape and different sizes on the neck, trunk and thighs. Subjective symptoms were absent. The general health was good and the patient was quite normal mentally. The pigmentations appeared in early infancy. The testes were undescended.

CONCLUSIONS

1. The cutanous manifestations of Recklinghausen's disease consist, in a certain group of cases here described, of nothing more than widely scattered pigment spots irregularly distributed on the trunk, buttocks and thighs. They vary from a light yellow to a deep brown, and from pinhead sized freckles to extensive areas, large enough to cover a buttock or a thigh, or a large area of the trunk.

2. This tumorless variety of the affection is usually encountered in one or more children of a family in which either parent has a typical neurofibromatosis cutis, as originally described by Recklinghausen. However, a pigmentary eruption without tumors may also occur in adults.

3. To this variety of Recklinghausen's disease the terms "incomplete" and "abortive" have been applied, suggesting the assumption that as the disease progresses, tumors eventually will make their appearance.

4. The terms neurofibromatosis cutis or fibroma molloscum multiplex are applicable only to those cases in which tumors form a part of the clinical picture.

24 West Fifty-Ninth Street.

ABSTRACT OF DISCUSSION

Dr. John H. Stokes, Philadelphia: I have always been distressed by our habit of calling the Recklinghausen syndrome a disease, and equally so by the confusion in that term of "fibromatosis" and "neurofibromatosis." As regards the pigmentary manifestations, one is inclined to wonder whether the neurogenous factor is not bound up with the abdominal sympathetic mechanism and the pigment metabolism of the body. The mental disturbances and peculiarities in conduct and make-up of these patients suggest a nerve factor. The showers of small, pigmented, nevoid papules which one sometimes sees in association with pigment-producing systemic disorders without actual metastatic malignancy are of interest, though not necessarily in point.

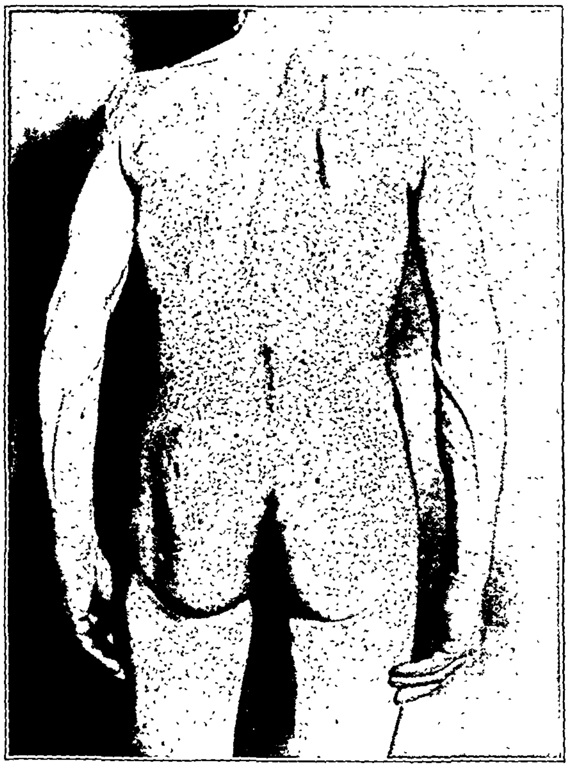

Fig. 6 (Case 1).—Rear view of patient.

Dr. L. K. McCafferty, New York: Many authors in the foreign literature have been inclined to disregard the hereditary tendency, but this tendency is quite evident in the cases of Drs. Wise and Eller. A scoliosis is present in many of these cases. Most persons present some slight functional scoliosis. Occasionally, instead of a scoliosis, these patients will present a kyphosis. Recently, an orthopedist informed me that many of these cases of Recklinghausen's disease presented themselves in an orthopedic clinic with a kyphosis, and on examination the cutaneous manifestations of Recklinghausen's disease were seen. Levin some time ago brought up the analogy between disturbance of the endocrine glands and Recklinghausen's disease. In two of the patients presented by the authors there were undescended testes. It might be advisable to have these cases examined carefully from an endocrinologic point of view if this has not already been done. Improvement has been reported in a few cases by proper endocrine therapy.

Dr. Charles M. Williams, New York: The thing that struck me most in both boys was the peculiar fold of skin over the root of the penis, and the undescended testis, both of which are signs of pituitary insufficiency. The children are suffering from a congenital abnormality, but these defects do not necessarily assume the same form in all members of the family. One of the children has a tumor which permits a diagnosis of Recklinghausen's disease, but I do not see why the other case should be so classified until typical symptoms have developed.

Dr. Herman Goodman, New York: Recklinghausen, in his original article, described neurofibromas associated with skin fibromas. The term Recklinghausen's disease is very loosely used by surgeons, neurologists and dermatologists. The same may be said for the term "neurofibromas." Rarely has a skin fibroma been found with any evidence of a nerve being enclosed within the tumor. Neither a healthy nor a diseased nerve has been demonstrated. We have been going much further than Recklinghausen. I do not remember anything in the original monograph, or in the pictures which accompanied it, which could fit the types of pigmentation described by the authors. We should, perhaps, be more purists in the use of terms. There certainly is a condition that fits the name "neurofibromatosis." It is not the condition that we know as fibromatosis of the skin. Recklinghausen's contribution to this subject is properly shown by the title he gave to his monograph. We have been using the three terms as if they were interchangeable. In addition, we have added the term "fruste."

Dr. Fred Wise, New York: The point of view that Dr. Williams takes is one for which he has logical reasons, but with which we do not agree. The name Recklinghausen's disease has been given to several different entities, but if we do not designate these cases we have just described as Recklinghausen's disease, I do not know what we would term them. We cannot term them neurofibromatosis unless the eruption is associated with tumors. We do not say that they are Recklinghausen's disease in the same sense as Recklinghausen originally described it, but we assume that they are of the type Recklinghausen had in mind. One feature Dr. Eller did not have time to touch on is that of treatment. The question arises whether the administration of thyroid in the case of the younger boy would prevent tumor formation. This has always interested us in connection with these cases. We have experimented with two patients in whom feeding of thyroid had no effect, and it is doubtful whether any glandular product would have curative results in these abortive types of Recklinghausen's disease.

Dr. J. J. Eller, New York: So many cases of pigmentation similar to the ones shown today have been described in the literature, which later were followed by small tumors identical with those in Recklinghausen's disease, that we were led to believe that a diagnosis could occasionally be made before the tumors appeared on the skin. Most of the other cases described in the journals were cases in which the father or the mother had typical neurofibromatosis as described by Recklinghausen, and the children had pigmentary disorders which later developed into tumors. We believe this younger boy will later develop tumors, and that the older boy, who now has one tumor and who three years ago had only pigmentation, will later develop more tumors and present a typical case of Recklinghausen's disease.

EPIDEMIC BULBAR POLIOMYELITIS

REPORT OF SIX CASES WITH ONE NECROPSY [*]

JOHN McEACHERN, M.B. (Tor.)
WINNIPEG, MANIT.

During the latter half of August, 1924, a small outbreak of acute anterior poliomyelitis occurred in Winnipeg. The most interesting feature of this outbreak was the constant occurrence of acute bulbar paralysis with complete absence of limb involvement.

The occurrence of transient bulbar paralysis and its association with spinal symptoms and paralysis have frequently been noted. A constant localization of the virus in the medulla and pons with no clinical signs elsewhere is unusual and merits notice.

Medin,[1] in 1890, drew attention to the rarity of cranial nerve involvement without signs of limb paralysis. Peabody,[2] in 1911, described only four examples of true bulbar paralysis in a series of 183 carefully studied cases. In a series of 868 cases seen by Wickman [3] in 1905, only thirty-four showed cranial nerve involvement alone, and in these the facial nerve was most commonly affected. The ninth, tenth or eleventh nerves were involved in only four cases of this series.

In the epidemic reported in this paper, on the other hand, it was this very region, to judge from the clinical symptoms, that was attacked by the disease. At the same time, it must be admitted that when the matter was put to the searching test of postmortem examination, the distribution of the lesions was not that which a clinical study of the case would have given one reason to expect. This discrepancy is a well recognized fact which has been particularly emphasized by Peabody in his study of the New York epidemic of 1907.

Case 1.—D. N., a girl, aged 6 years, was perfectly well, August 17, but on the following day she had a slight headache. On the 19th, she became acutely ill with severe headache, vomiting, and a temperature of 103 F. There was some stiffness of the neck, but the most marked symptoms were inability to swallow and regurgitation of fluids through the nose. The voice was normal. In ten days, the child was entirely well with no residual paralysis.

Case 2.—H. M., a girl, aged 10 years, suddenly fell ill, August 2, with headache, vomiting and pain in the neck. The temperature ranged from 103 to 104 F. From the first day, the voice had a peculiar nasal quality. When seen on the third day, the little patient was unable to swallow. For ten days she was fed by gavage, during which time she remained in a semicomatose condition but was very irritable and hyperesthetic. The deep reflexes were very active. After the tenth day, improvement was rapid, although one month after the onset she was still unable to swallow solid food of a tenacious kind, such as mashed potatoes. She has now recovered (March, 1925), and there is no residual paralysis.

Case 3.—V. G., a girl, aged 3 years, was seen August 9, twenty-four hours after the first sign of illness. At that time, the child was gasping and choking for breath. The mouth and pharynx were completely filled with a frothy, white, mucous fluid. The posterior nares and nose were filled with the same material. The child was unable to swallow, and, although the throat and nose swabs were negative for Klebs-Löffler bacilli, 7,000 units of diphtheria antitoxin was administered, with no improvement. One week later, the child was markedly hyperesthetic and irritable. The long bones, especially the femur and tibia, were very tender. August 14, the child had a convulsion and the mother, thinking she was choking, picked her up. She died in the mother's arms.

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[*] From the Departments of Pathology of the University of Manitoba, and the Winnipeg General Hospital.

[1] Medin: Ueber eine Epidemie von spinaler Kinderlahmung, Verhandl. X. Internat. Med. Kongr., Berlin, 1890.

[2] Peabody, Draper and Dochez: Acute Poliomyelitis, Monograph 11, Rockefeller Inst., 1911.

[3] Wickman: Studien zur Poliomyelitis acuta, Arb. a. d. path. Inst. d. Universität. Helsingfors, 1905, p. 109. A complete bibliography will be found in Romer's Epidemic Infantile Paralysis, New York, William Wood & Co.

This was a case of true bulbar paralysis with the peculiar occurrence (in common with several others in the series) of a white, frothy, mucous fluid in the upper respiratory tract.

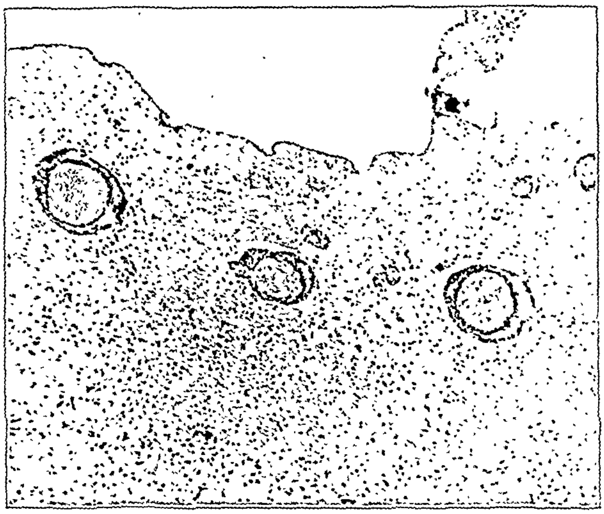

Fig. 1.—Floor of the fourth ventricle, showing perivascular collars of cells in Case 6.

CASE 4.—N. C., a girl, aged 6 years, suffered from headache and weakness for a few days. When seen, August 28, her chief symptom was an inability to void urine, associated with a high temperature and a rapid, thready pulse. The child's neck was slightly stiff and tender, but no other paralysis or abnormal sensation was found. There was a profuse watery nasal discharge which was bacteriologically negative. August 30, she became irrational, and a flaccid paralysis of the right leg and ptosis of the right eyelid were found. Complete paralysis of the vesical sphincter necessitating routine catheterization persisted for ten days, after which the condition gradually improved. The urine was normal. Six weeks later, the child still suffered from a selective paralysis of the muscles of the right leg.

This case exemplifies in a striking manner the wide distribution of the lesions in some cases of poliomyelitis. Commencing apparently in the lowest part of the cord and there causing sphincter paralysis, the disease extended up as far as the mesencephalon. Many cases of transient paralysis of the sphincters have been reported which have cleared up in one or two days. In this child it lasted for ten days, and such cases are rare indeed.

CASE 5.—D. B., a boy, aged 4 years, had been irritable and drowsy for one week. He awoke, August 8, with a rattle in his throat and was unable to swallow. Examination revealed a left-sided complete facial paralysis, a deviation of the tongue to the left when protruded, and a white, frothy mucus in the nose and throat. The child was unable to swallow. The left knee jerk was absent, but there was no evidence of limb paralysis. Lumbar puncture provided a clear fluid under slightly increased pressure and a marked increase in globulin due to the presence of polymorphonuclear and lymphoid cells (about 200). No organisms were found, and the sugar content was within normal limits. Although the child was fed by gavage for two weeks, vomiting through the nose persisted. He was discharged, September 6, with a slight residual paralysis of the soft palate and a marked facial paralysis.

CASE 6.—A. B., a girl, aged 6 years, was admitted to hospital, August 27, and died eight hours later. Three days prior to admission, the child was perfectly well. The onset was characterized by coryza and a feeling of nausea, followed in a few hours by vomiting. The child was feverish and, the day prior to admission, regurgitation of fluids through the nose took place. Associated with this was a complete inability to swallow and a disturbance of speech. When first seen, the child was very ill indeed, and suffered from severe headache and pain at the nape of the neck. The mouth was filled with white foam. There was complete aphonia and absence of the cough reflex. She was admitted in a comatose state, and owing to her collapsed condition it was not possible to make a complete examination. There was, however, marked retraction of the head, a bilateral internal strabismus, and a paralysis of the soft palate. The arms and legs were moved freely on irritation. Laboratory tests revealed a negative throat swab, a leukocytosis of 15,000, and a differential white blood count of 67 polymorphonuclear cells and 30 small lymphocytes.

Postmortem examination showed that the child was well nourished, with apparently normal heart and lungs; there was nothing of any gross or microscopic interest in the abdomen except a universal enlargement of the mesenteric lymph glands, which were red and soft. The dura mater was firmly adherent to the skull cap. Puncture of the cisterna magna just after death provided some cloudy spinal fluid with a lymphocytic count of 375 cells per cubic millimeter. No organisms were found in this fluid.

Microscopic examination revealed the fact that, while lesions were to be found scattered throughout the greater part of the central nervous system, from the basal ganglions above to the lumbar region of the cord below, it was in the pons, the medulla and the upper part of the cord that the full force of the virus had been felt.

The cerebral and cerebellar cortex showed no lesions, and the same was true of the thalamus, the caudate nucleus, and the putamen of the lenticular nucleus. In the globus pallidus, however, a few of the telltale perivascular collections of lymphocytes and plasma cells could be detected, and many of the vessels were thrombosed. The lesions became more abundant and more marked in the midbrain, but they still remained perivascular in distribution. When the pons was reached, however, the entire picture changed. True, the familiar perivascular collars were still much in evidence (Fig. 1), but what now dominated the picture was a veritable flooding of the tissues with inflammatory cells, a diffuse infiltration of an intensity rarely seen in epidemic encephalitis (Fig. 2). The cells of which this infiltration was composed were lymphocytes and plasma cells. The inflammatory reaction reached its height in the medulla and in the upper part of the cord. In the medulla, the diffuse infiltration was even more extensive than in the pons, and among the inflammatory cells a number of polymorphonuclear leukocytes could be seen, a sufficient indication of the intensity of the infection. Many of the nerve cells were profoundly degenerated, and some

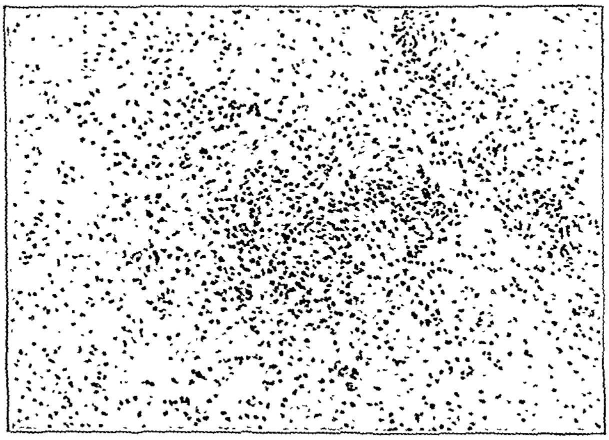

Fig. 2.—Area showing diffuse infiltration in pons in Case 6.

of these were surrounded by phagocytic cells which were hastening their destruction, a process of neuronophagia.

The intensity and arrangement of the lesions in the cord were identical with those in the brain except that the lesions diminished instead of increasing as we passed from above downward. In the cervical cord, the gray matter of the lateral and posterior horns was the site of an intense diffuse inflammatory infiltration, while the anterior horn showed little or no change. Nerve cell degeneration and neuronophagia were very marked features (Fig. 3). The lesions were more marked on the left side Many small hemorrhages and perivascular collars of inflammatory cells were scattered throughout the gray matter and to a lesser extent in the white matter. The meninges showed no inflammatory lesions except deep down in the anterior fissure In both the dorsal and the lumbar regions, numerous lesions could be seen, but they were nothing in severity to those just described in the cervical cord. The vessels were congested, and there were small perivascular collars, but no hemorrhages, no diffuse infiltration, and no neuronophagia.

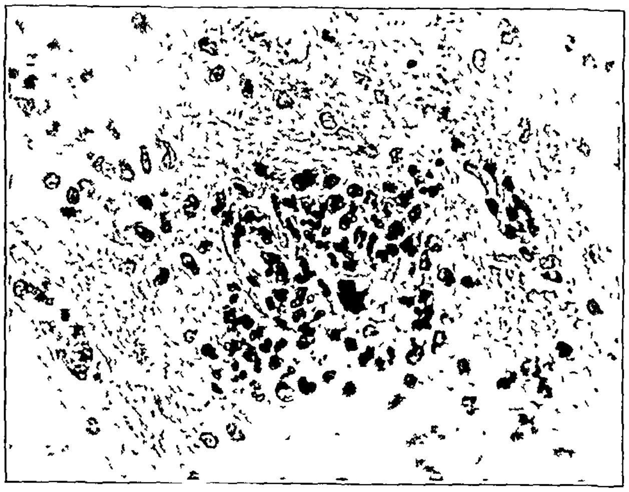

Fig 3.—Nerve cell in the cervical region of the cord showing neuronophagia in Case 6.

Although the matter is still *sub judice,* we may for the present assert that the voluntary muscles of the pharynx, larynx, upper esophagus, vocal cords and soft palate are supplied by the eleventh cranial nerve. As these are the very muscles that were involved in the foregoing patient, we would expect the most marked lesions about the eleventh nucleus. The difficulty of correlating the pathologic and clinical findings in bulbar poliomyelitis, which has already been referred to, is well exemplified in the present case, in which the lesions were more pronounced in the cervical region of the cord than in the vicinity of the eleventh nucleus.[4]

SUMMARY

1. In a peculiar epidemic of poliomyelitis of the bulbar type, the cases all presented the common clinical symptom of paralysis of the muscles of the upper respiratory tract. There was no coincident paralysis elsewhere.

2. A striking feature of several cases was the presence of a white, frothy mucus in the nose and throat.

3. In agreement with the generally recognized severity of bulbar poliomyelitis, two of our patients died, and in the others the clinical picture was for a time very grave.

4. The constant involvement of the muscles supplied by the eleventh nerve is most unusual.

5. The dissociation between clinical and pathologic findings is well exemplified in the case studied at necropsy, the most intense reaction occurring in the cervical cord rather than in the medulla.

6. Paralysis of the sphincter vesicae, of ten days' duration, occurred in one of the cases described, which also well illustrates the widespread distribution of the lesions:

7 Roslyn Road.

PARAFFINOMA

DOUGLASS W. MONTGOMERY, M.D.
AND
GEORGE D. CULVER, M.D.
SAN FRANCISCO

We have seven histories of paraffinomas, of which two are of more than ordinary interest. All the victims were women. The ages of six of them were, respectively, 43, 38, 44, 71, 41, and, finally, as a surprise, 20 years.

One of the especially interesting cases was that of a woman, aged 43, who consulted us, Sept. 17, 1912, and who began to get paraffin injections into the face the preceding May. The last was given, June 10. Therefore, she consulted us three months after the last injection. Two days after this last injection, she caught "cold" in the face in going to the beach, and the site of the injections became swollen, red and inflamed; ever since, this irritation had recurred about every ten days. When the patient consulted us there was a dark red, irregular shaped induration of the left cheek, with much edema of the left lower lid. The patient had several infected teeth that may have had

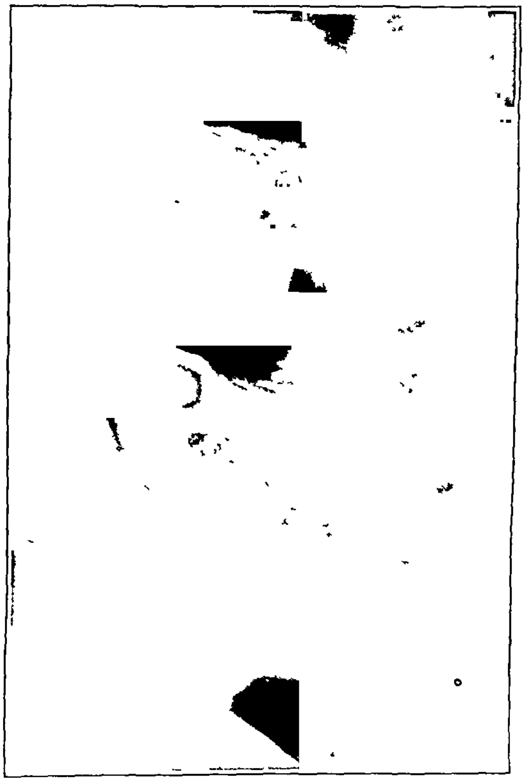

Fig. 1.—Small pea sized pseudoxanthomas scattered along furrows, produced by retraction of the tissues

some influence in what we considered to be a recurrent relighting of a chronic streptococcic infection. She also had a gastro-enteritis, which also may have contributed to her attacks. Antistreptococcic serum was employed in vain; the attacks persisted, sometimes as nodules, sometimes as more widely spread indurations. After seven months of treatment, during which many remedies were tried, the patient vanished from our sight, with no improvement noted.

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[4] Since the preparation of this paper, F B. Walsh has reported in the Canadian Medical Association Journal (15: 482 [May] 1925) a most interesting clinical review of an outbreak of poliomyelitis in Saskatchewan The remarkable similarity of many of his cases to those described above will be noted.

The other interesting case referred to was one in which the scars resulting from the paraffin injections underwent a curious fatty degeneration, giving a picture resembling pseudoxanthoma elasticum.

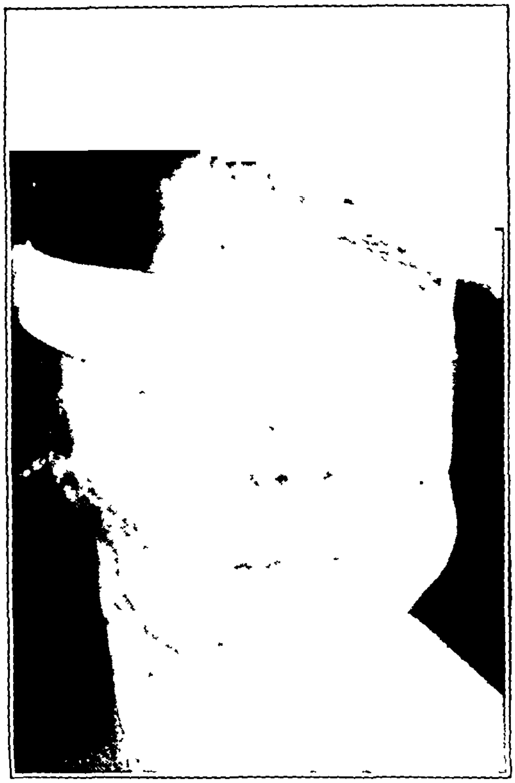

Fig 2 —Severe retraction of the tissues has pulled back the corners of the mouth, pouted the lips and puffed out the cheeks above and the neck below the severely affected areas The skin of the neck is thrown into snakelike folds

Pseudoxanthoma and elastorrhexis are terms applied to yellow, smooth, soft tumors exactly resembling in their appearance xanthoma, but due not to a deposit of cholesterin as xanthomas are, but to a colloid degeneration of the elastic tissues of the affected part.

The woman, aged 44, was referred to us, Jan. 29, 1917. She had had paraffin infiltrated into the cheeks five years previously, and they had recently become inflamed. This inflammation subsided under appropriate treatment, but the deformity proceeded in the usual way, and among other things interfered with the opening of the mouth.

In April, 1922, the patient called, saying that ten days previously an inflammation had begun on the left cheek, which resulted in a depressed dry ulcer, situated in an indurated furrow. She feared cancer, and in fact the posterior edge of the ulcer at the tragus was waxy and resembled epitheliomatous infiltration. We had occasion to be alarmed, as B. F. Davis and Fred Wise had both reported malignant changes occurring in paraffinomas. There was a slanting series of scars running downward and forward from the ear along the cheek toward the corner of the mouth. The cheek both above and below this row of scars was indurated and puffed out by paraffinomas, some of which below the jaw were movable nodules. The same condition was present on the left cheek, but less marked. Both corners of the mouth were retracted. All the foregoing symptoms were those ordinarily seen in paraffinoma. On more narrowly observing the patient on account of the smooth yellow epithelioma-like character of the tragus of the right ear, it was noticed that scattered along the scar down the cheek there were soft yellow tumors exactly resembling xanthomas; then it became clear that the condition of the tragus was of the same nature. There were also some of these little tumors on the left cheek. That they were not xanthomas was clear from their restriction to the scarred areas and their absence from the eyelids. The disturbance of the circulation had given rise to the degeneration of the elastic tissue of the skin, and in the tragus had affected also the elastic cartilage of the earshell.

The question of punishing persons who cause such suffering is a grave one. The legal phrase caveat emptor, let the buyer beware, is an old one in Anglo-Saxon law and is justly respected, but the conditions in modern life have changed. A few years ago no one suspected the psychic effect of advertising. We now know that the most vicious and destructive agents or measures may flourish under its influence, and that a given amount of advertising will secure a given amount of trade, irrespective of the worth of the article advertised. The people who do this advertising of an injurious method or substance are as deliberately vicious as those who accomplish the act, and both should receive a punishment adequate to the harm they do.

323 Geary Street.

SOME CAUSES OF POOR FUNCTIONAL RESULTS FOLLOWING PROSTATECTOMY *

ROBERT H HERBST, M.D.
CHICAGO

The paramount issue in the problem of benign prostatic obstruction is not simply the removal of the enlarged gland, but the correction of urinary function to as near the point of perfection as possible. In order to obtain this result, it is frequently necessary to do more than the enucleation of the adenoma. There are a number of factors that play a part in poor function following prostatectomy, the correction of which, before or at the time of the removal of the gland, would help to minimize these not uncommon results. Some of these conditions are due to omissions in the preoperative study, while others may be avoided by careful attention to detail during removal of the gland.

DIVERTICULA OF THE BLADDER

Diverticula of the bladder are not uncommonly associated with prostatic obstruction and play an important rôle in its symptomatology. In fact, they may have more to do with the impaired function than the obstruction at the neck of the bladder. Therefore, their recognition and removal are essential.

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* Read before the Section on Urology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

The etiology of diverticula is still an unsettled question, and much of the literature up to the beginning of this century was devoted to the discussion of origin of these sacs whether congenital or acquired. The numerous reports of diverticula found in children, in females, and even in males, in whom careful search failed to reveal any signs of obstruction, are sufficient evidence in favor of the congenital origin of some of them. On the other hand, the frequency with which this condition is associated with the various forms of lower urinary tract obstruction would lead one to believe that they are acquired in many cases, especially in those in which there has been a total absence of symptoms until obstruction occurred. Few will question the possibility of congenital areas of weakness in the bladder wall, or a predisposition to herniation, which, when aggravated by urinary obstruction, is followed by the development of diverticula. The symptoms of diverticula are practically those found in the average case of prostatic obstruction; for this reason they may be overlooked unless a careful investigation is carried out before removal of the enlarged gland. In addition to the symptoms of bladder infection, diverticula, like the enlarged prostate, may produce upper urinary tract obstruction. They are frequently located in the region of the ureters and, when distended, may obstruct the flow of urine from the kidney, by pressure. Under these circumstances, we may see the complete picture of prostatic obstruction produced by diverticula and, if overlooked at the time of removal of the prostate, there will be little change in the symptomatology.

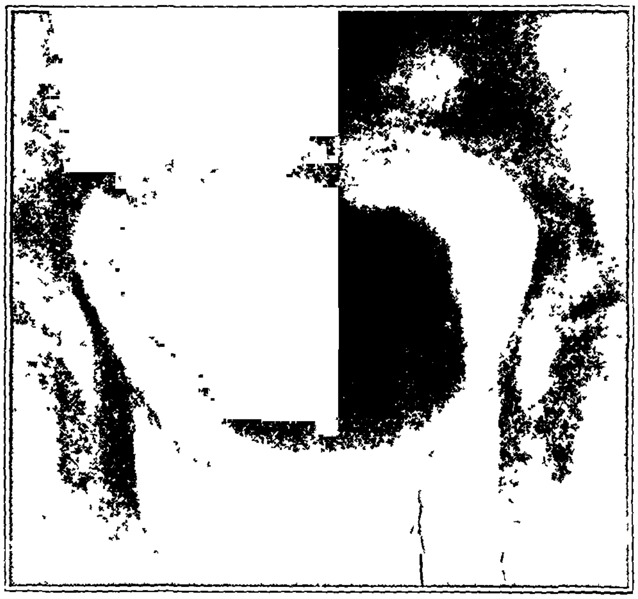
Fig 1.—Retention diverticulum The bladder and diverticulum are filled with contrast fluid

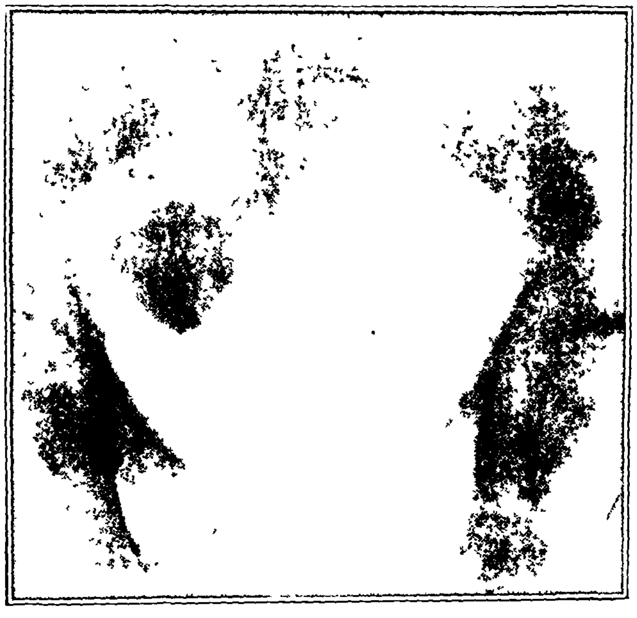
Fig 2.—Retention diverticulum: The bladder has been drained by the catheter and air has been injected, but the contrast fluid is retained in the diverticulum.

A clinical diagnosis of diverticula of the bladder was rarely made before cystoscopy and radiography were added to our diagnostic equipment. Most diverticula can be found with a cystoscope; but the information obtained is of limited value, because, although it gives accurate information as to the number of pouches and the location, size and shape of the orifices, it does not aid us in differentiating between the diverticulum that empties coincidentally with urination and the one that does not. The former, which may be designated as nonretention diverticula, rarely produce symptoms, while the latter practically always produce symptoms, and may be called retention diverticula. The differentiation between these two types cannot be determined with a cystoscope, but can be accurately made by a cystogram.

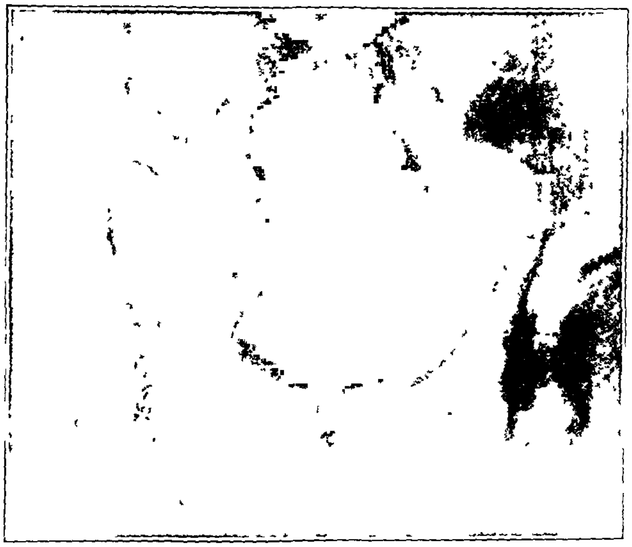
Fig 3.—Nonretention diverticulum: The bladder and diverticulum are filled with contrast fluid

This information is of the utmost importance, and the question of surgical indication hinges on this point. In some cases of prostatic obstruction, when the contour of the neck of the bladder is changed so that it will not admit the passage of the cystoscope, cystography is the only means of locating diverticula. Again, by this method, we may obtain information as to the exact shape, direction of the diverticulum, its relation to other organs, and the presence of foreign bodies, such as stones and tumors.

The presence of retention diverticula, associated with the hypertrophic prostate, should be determined before the bladder is opened. Unless this is carried out in the preoperative study, many of these diverticula are liable to be missed, because the orifices often close as the bladder collapses.

If such diverticula are overlooked, we find the patient usually passes through a slow convalescence, and is not relieved of his urinary symptoms, even though the obstruction has been completely removed. This is explained by the fact that the urine retained in the diverticulum is constantly poured into the bladder, keeping up a cystitis, with frequent imperative, painful urination, symptoms commonly associated with prostatic obstruction.

Knowing how frequently diverticula are associated with prostatic obstruction, and the importance of the knowledge of their existence, I cannot urge too strongly the utilization of cystography in the preoperative study of lower urinary tract obstruction. This should be carried out in the following manner: After it has been emptied, the bladder should be distended with a contrast fluid (I use 15 per cent. solution of sodium iodid) and a film taken. This gives an excellent picture of the bladder and its filled diverticulum. The bladder is then emptied of its contrast medium, air is injected, and a second film is made. If retention diverticula are present, they are seen clearly outlined by the retained contrast fluid, while the bladder area is dark, owing to the presence of the injected air. This method is not original with me—Hinman used a similar method in 1919—but knowing the value of the information obtained through its use, I stress it, with the hope that others will include it as a routine preoperative study in the prostatic patient.

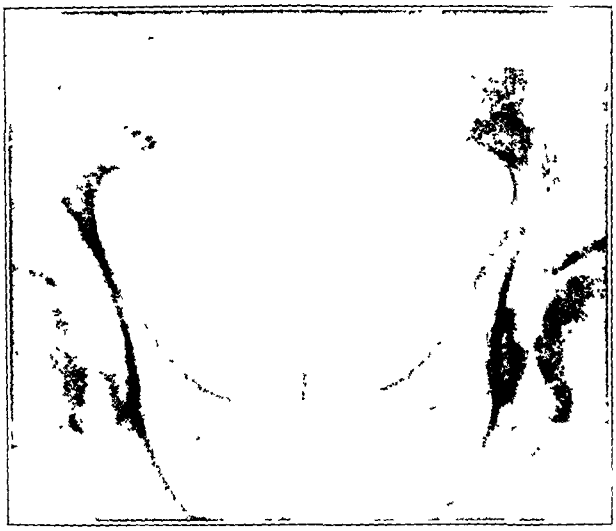

Fig. 4—Nonretention diverticulum: The bladder has been drained by the catheter and air has been injected The diverticulum empties with the bladder.

A cystographic study furnishes information helpful in planning the operation best suited to a given case. Nonretention diverticula rarely require removal, while those that *retain urine cannot be benefited by anything* short of excision. Whether or not these sacks should be removed before, at the time, or after the removal of the prostate, depends on the condition of the patient. Probably the same rules may be applied to these cases as are used in cases in which obstruction is not complicated by the presence of retention diverticula.

When serious changes in the upper urinary tract require preliminary drainage, it should be carried out with a catheter, *if possible, rather than* by cystostomy, because the latter may increase the technical difficulty encountered in excising the diverticulum. When retention diverticula are found associated with hypertrophy of the prostate, they should be removed before, at the time, or soon after the removal of the gland. Failure to carry this out is frequently the cause of poor functional results.

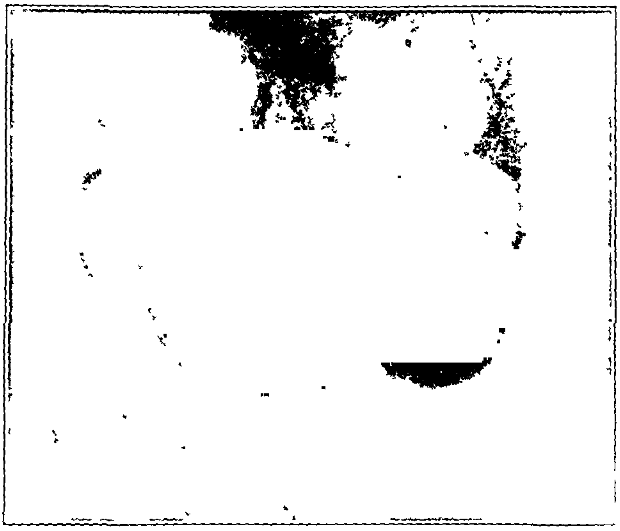

Fig. 5.—Cord bladder: The bladder and diverticulum are filled with contrast fluid.

NERVE BLADDER

The so-called cord bladder, when associated with enlargement of the prostate, may be the cause of poor functional results. It is particularly difficult in dealing with this combination to determine preoperatively the part played by each in the production of symptoms. There are two types of nerve bladders: those in which a lesion in the central nervous system can be demonstrated by a neurologic study, and those in which there is no evidence of any changes in the cord, the latter probably caused by sensory disturbance. T. D. Moore states that 23 per cent. of the cord bladders seen in the Mayo Clinic in 1921 and 1922 were of the latter type. It is quite important to carry out a preoperative neurologic study in the prostatic, and this should include an

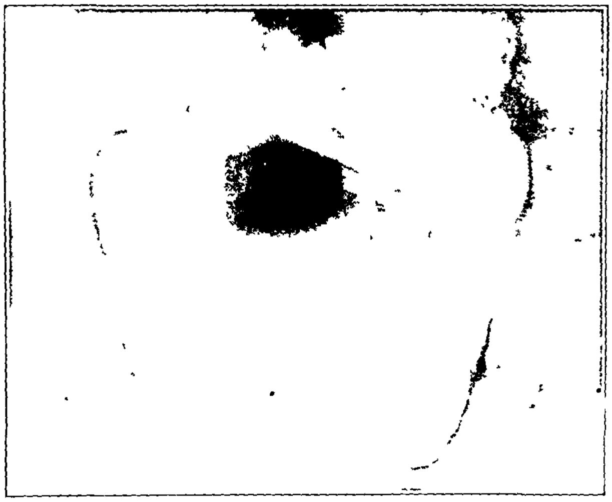

Fig. 6—Cord bladder: The bladder empties incompletely, even when drained by the catheter

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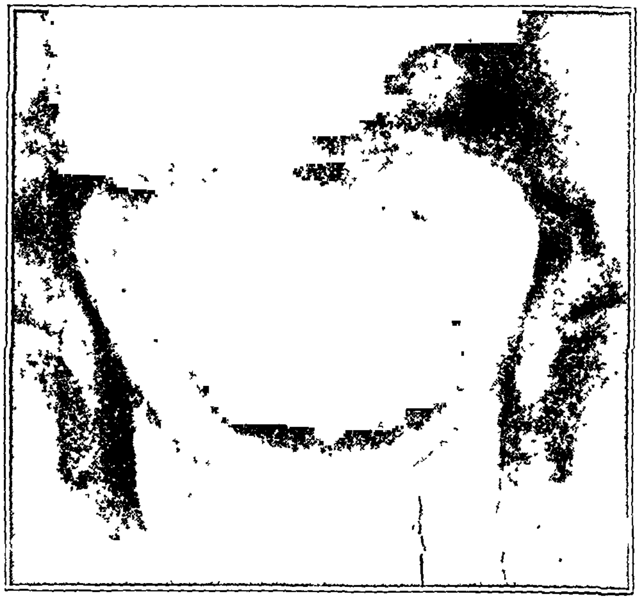

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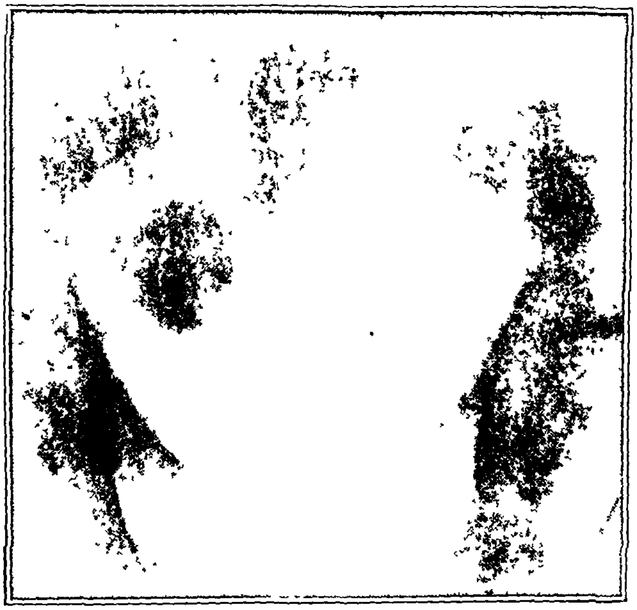

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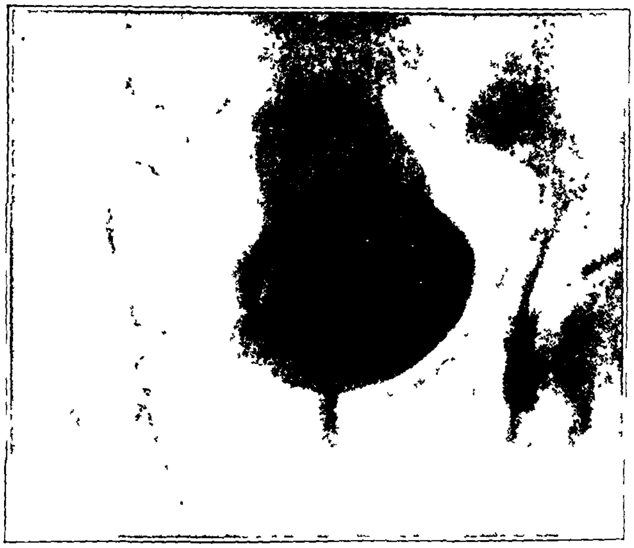

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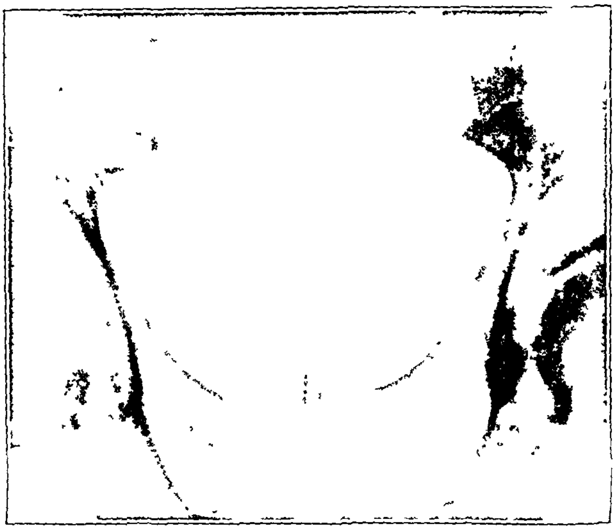

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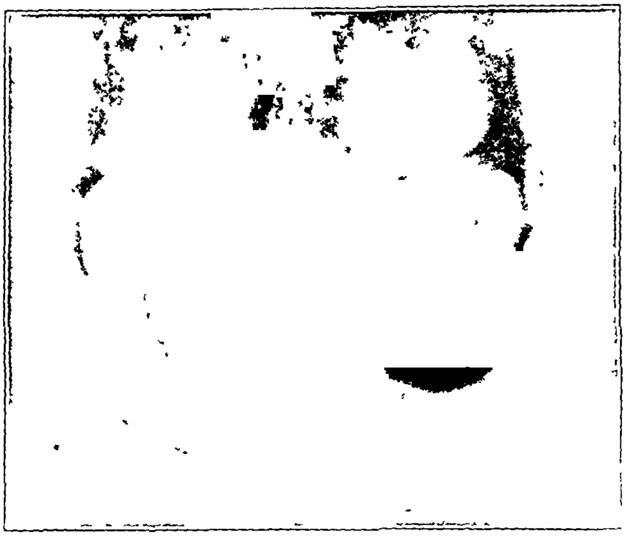

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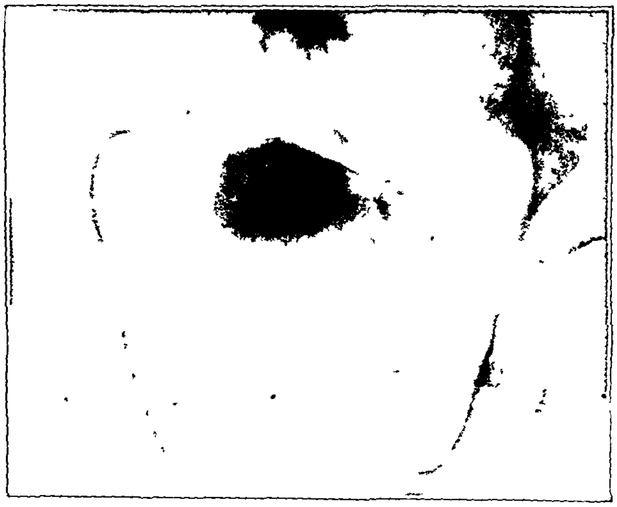

Fig. 6—Cord bladder: The bladder empties incompletely, even when drained by the catheter

investigation of the sensory changes, as pointed out by Moore, as well as a search for lesions of the cord.

The relaxation of the internal sphincter, so valuable in making a diagnosis of cord bladder, cannot be demonstrated, owing to the presence of the enlarged prostate. Trabeculation of the bladder is present in both conditions; and although the trabeculation of mechanical obstruction is different from that of cord bladder, when the two conditions are associated, this sign is not very helpful.

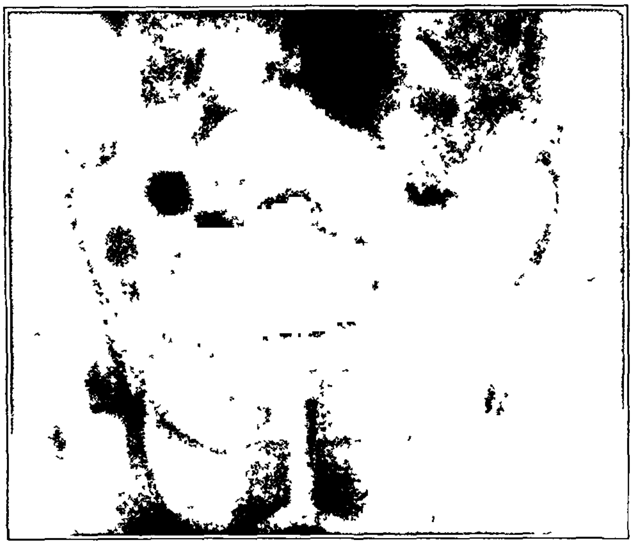

Fig 7—The prostate has been removed, but retention is still present, owing to overlooked fibrosis of the bladder neck

The age of prostatism is the age of arteriosclerosis, and this condition of the cord must be thought of when prostatectomy fails to give good urinary function.

It is difficult in many of these cases of cord bladder to determine how much of the retention is due to the enlargement of the prostate, especially if the gland is only moderately enlarged, and how much of it is due to faulty innervation. That some of these cases are not benefited by prostatectomy few will question, and the surgical indication is always a problem; nevertheless, the preoperative knowledge of the existence of a cord bladder is most valuable in giving a prognosis as to functional results.

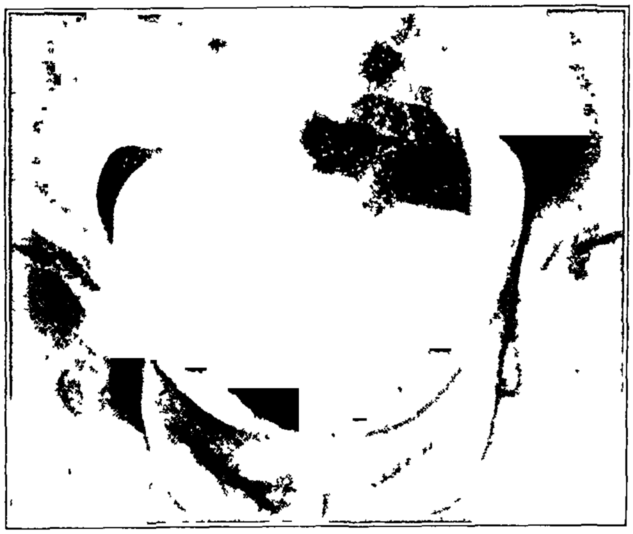

Fig 8—A case of bilateral retention diverticula, in which the enlargement of the prostate was insignificant, and yet marked symptoms of prostatism were present The bladder and diverticula are filled with contrast fluid.

Fibrosis of the internal sphincter may interfere with urinary function after removal of the gland. This may assume two forms: the condition called by the older writers contracture of the neck of the bladder, which includes the small hard prostate and fibrosis of the internal sphincter; and the tight sclerotic internal urethral orifice, probably postinflammatory, associated with hypertrophy of the gland. Failure to recognize this condition of the orifice, before or during the removal of the prostate, may be the cause of a poor functional result. That the prostatic bed may harden and contract to the point of interfering with micturition is well known, but undoubtedly some of these fibroses are present before the gland is removed, and the condition should be corrected.

Prostatic tags left after prostatectomy and attached to the internal urethral orifice may be large enough practically to obstruct the outflow of urine and to interfere with urinary function. These tags may become necrotic, slough off, engage in the internal urethral orifice, and obstruct the urine; also they may act as nuclei for stone formation. There is little danger of overlooking these tags and removing them, especially by those who perform a visual prostatectomy. Failure to remove them may necessitate a second operation, such as diathermy, a punch operation or excision.

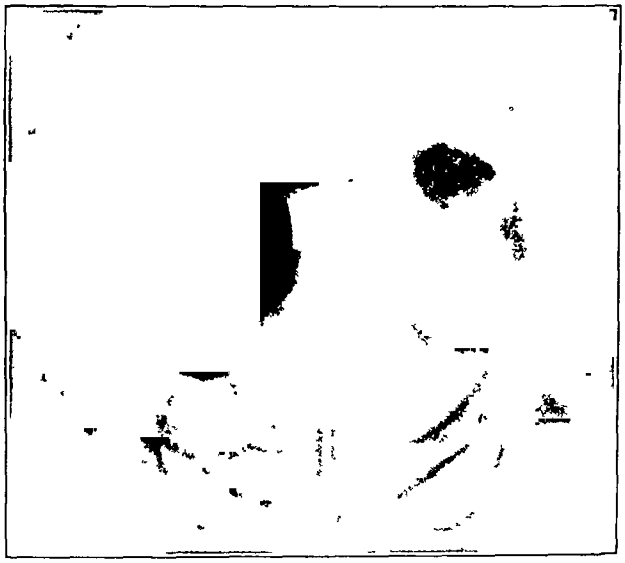

Fig 9—A case of bilateral retention diverticula, in which the enlargement of the prostate was insignificant, and yet marked symptoms of prostatism were present The bladder is drained, and the diverticula are still filled

A bar produced by the trigon, crossing the internal urethral orifice at a high level, may be the cause of a poor functional result. This can be seen and felt after the enucleation of the prostate, and may be corrected by a V-shaped excision of the bladder wall at this point.

Urethral polyps, developing in the prostatic bed, may be the cause of impaired function. A careful inspection of the urethra should be made in patients who, months after prostatectomy, show evidence of obstruction to the outflow of urine. The origin of these polyps is not known, but it is evident that they develop more frequently in the prostatic bed than in the normal urethra. When found, they are easily removed by diathermy.

Careful bimanual palpation of the prostatic bed and trigon will prevent overlooking deep-seated subcervical glands, which, if not removed, may interfere with good urinary function following prostatectomy. These small globular masses are enlarged submucous glands of the trigon, termed, by some, aberrant prostatic glands or Albarran's glands.

Retention and infection of the upper urinary tract is the most important part of the problem of prostatic obstruction. This infection may persist, after the obstruction has been removed, pouring infected urine into the bladder and keeping up a severe cystitis. This is a rather common cause of poor function, following prostatectomy, and should be suspected when the urine continues to be purulent, even though the bladder empties completely. However, it is not uncommonly overlooked. Careful study of the upper urinary tract, with subsequent treatment, such as pelvic lavage and instillation of silver nitrate, will usually correct the function in these patients.

Infection of the seminal vesicles may be the cause of persistence of symptoms after prostatectomy. This condition is commonly associated with prostatic hypertrophy, as is evidenced by the frequency of epididymitis following operation. The infection of the vesicles may occur after enucleation of the gland by direct extension from the prostatic bed. Some of these infected vesicles may be found before operation, by careful rectal palpation. Indeed, they may be responsible for most, if not all, of the symptoms charged up to the enlarged prostate. When infection persists after operation, treatment must be directed to these organs. Routine massage may relieve the symptoms and improve the urinary function. If this fails, vasotomy or vesiculectomy may be necessary in order to obtain a good functional result.

The formation of stone in the bladder, in the prostatic cavity, or incrustration of the prostatic bed, may interfere with good urinary function. The presence of either of these conditions is easily determined by cystoscopy or roentgenography, and their removal is usually followed by prompt improvement.

Incomplete removal of prostatic adenoma may be followed by recurrence and a poor function result. This reformation is not commonly seen, and, when it occurs, is usually due to incomplete enucleation of the adenomatous tissue, or failure to remove enlarged submucous glands.

CARCINOMA AND BENIGN HYPERTROPHY

Failure to recognize an associated malignancy in the lower segment with benign hypertrophy in the upper segment may be the cause of persistence of symptoms after removal of the benign part. Adhesion of the posterior surface of the gland to the lower segment should make one suspicious of this condition, and a bimanual palpation of the prostatic bed, following enucleation, will usually reveal some hard nodules in the so-called surgical capsule of the gland.

Postoperative investigation of the prostatic serves to emphasize the value of a complete preoperative study. This should include a cystoscopic examination, whenever it can be carried out. There are definite contraindications to its use, and when they exist a cystogram will often give the desired information. A neurologic study, including a study of the motor and sensory tracts, will furnish valuable diagnostic and prognostic data. Again, careful inspection of both bladder and bladder neck, and visual prostatectomy, including bimanual palpation of the prostatic bed, will greatly reduce the number of poor functional results.

In this brief paper, I have not made an attempt to discuss all the conditions that may be the cause of poor functional results following prostatectomy, but have tried to emphasize those which are more commonly encountered in the postoperative study of the prostatic.

104 South Michigan Avenue.

ABSTRACT OF DISCUSSION

Dr. A. L. Chute, Boston: Dr Herbst has brought up many things that trouble us following prostatectomy. In the first prostatic case with a diverticulum of the bladder in which I operated, I followed the patient's wish and did the diverticulum first, as he wanted to go for a vacation and get into better condition to face what he considered the serious operation. When he came to having the prostatectomy done, the diverticulum had reformed. That was a great many years ago, and I do not do the operation that way now. It is very easy to leave enough tissue to cause obstruction, especially with the perineal operation I know I have left a considerable amount of tissue on a few occasions, because I have had a chance to see it. One man bled during his convalescence from a perineal prostatectomy, and I went in from above and found a considerable mass of tissue that was evidently to one side and was overlooked. This raises the question as to whether there is ever a recurrence of an adenomatous growth following prostatectomy. In theory there is no reason why this should not happen, but I think it does not occur often I was interested in the cystograms Dr Herbst showed, they seem to give a graphic way of determining whether we shall be likely to have trouble following operation I remember a patient I saw some years ago for whom a very good man in a neighboring city had done a prostatectomy. for a time following, operation symptoms were absent Symptoms then recurred, and another man saw the patient and said that he doubted whether his prostate had ever been removed. Rectal examination showed a large mass that was a perfectly typical carcinoma The original prostate had been carcinomatous and had recurred following its removal

Dr. Herman L. Kretschmer, Chicago: Dr Herbst covered his subject very well, and there are just one or two points I wish to mention. We as urologists have no excuse for overlooking diverticula. As to whether there is retention or not, I think this does not make much difference I think the indication is to remove such a diverticulum whenever found

Dr Alexander Randall, Philadelphia I think it is delightful to look back over the history of prostatectomy Taking as the first decade 1895-1905, one finds a period when prostatectomy existed as a surgical emergency The mortality at that time was not and never will be computed. From 1905 to 1915, we see the development of the perineal and suprapubic operations and see prostatectomy put on a surgical basis The mortality dropped from an astounding figure to one that was very creditable. The operation became a recognized surgical procedure. Nevertheless, at the end of that time, Whiteside was able to present us with figures showing that in the hands of those who were particularly interested the mortality was good, while in the hands of those doing general surgery the mortality was still to be omitted During that time we were taught by Young the proper means to prepare a patient, valuable functional kidney tests were developed, and we began to recognize the necessity of postoperative care. In the third decade, now ending, from 1915 to 1925, we see the results of our work We have seen the mortality fall further and further until, as we stand here today, I think we can feel justly proud of the results and realize that we have the situation well in hand. The papers today, and I think the trend of today show rather a satisfaction with that mortality, dealing as we are with such elderly patients, and I should like to see us enter this fourth decade bending our efforts toward what Dr. Herbst has pointed out—that we should strive to reduce the postoperative morbidity, which is still a very pertinent factor. We should get out of the rut of thinking that all we must do is save the man's life, and try to promise him a perfect postoperative recovery. One thing further about Dr. Herbst's paper, as regards the postoperative morbidity: We all see the patients who have more or less persistent postoperative fistulas. They delay the patient's convalescence; they delay his going home, and he goes past the three week limit. We should stop to realize that while this man has been developing his condition of prostatism over many years, he has been straining to urinate, and he has fallen into habits that are bad. I have on many occasions sat down and explained to these men the normal inhibitory function in relaxing their sphincters, and in this way have taught them to stop the pernicious straining that I have so often found to be the cause of the persistent fistula.

Dr. Clarence R. O'Crowley, Newark, N. J.: I believe that hemorrhage can be controlled much more easily in the suprapubic route. As Dr. Herbst shows, it is easy to cut down on diverticula of the bladder and find them different from the cystogram. I have been in the habit before operation of gathering a little further information by having a lateral cystogram taken.

Dr. Leon Herman, Philadelphia: I am convinced that both the suprapubic and the perineal operations are attended by considerable postoperative morbidity, more in fact than we are sometimes willing to admit. This, by the very nature of the mechanical problems involved, is inevitable. Those surgeons who practice the suprapubic operation almost exclusively will have, in all probability, considerable postoperative morbidity with their perineal operations. The advocates of the perineal operation are likely to have poorer results with the suprapubic operation. I have had bad results in some cases with each operation, and judging from the condition of some patients I have seen who have been operated on elsewhere, I am not alone in my difficulties. Considerable morbidity after the suprapubic operation is due to packing and other mechanical means used to prevent hemorrhage. I say prevent, and not control, for in the vast majority of cases after suprapubic prostatectomy, there is no bleeding that necessitates efforts to control it. Some time ago I prepared a paper in which it was stated that we had not used any hemostatic measures for a period of two years. On the morning of the day when this paper was to be presented, I encountered a hemorrhage after prostatectomy so severe that it was necessary to use five gauze packs pulled down into the prostatic bed by means of a Hagner bag to control the bleeding. Regardless of the technic employed, one will encounter the various postoperative complications sooner or later. Serious intravesical hemorrhage may occur from the most unexpected lesions; in one instance I found it necessary to pack the prostatic urethra from above to control an alarming hemorrhage that occurred after perineal prostatectomy for abscess; there was no bleeding from the perineal incision. I have seen almost fatal bleeding from a small vessel in the scar of the bladder wall consequent on operation for carcinoma in the absence of recurrence of malignancy. Profuse bleeding after prostatectomy usually occurs in cases in which it has been necessary to tear through the mucosa of the trigonal apex in order to free the gland; if the removal can be effected by peeling the gland from the vesical mucosa from in front backward, the hemorrhage will be slight for the reason that the large vessels of the mucous membrane are not torn across.

Persistent fistulas are seen after suprapubic prostatectomy and are usually, but not always, due to persistent obstruction at the outlet of the bladder. The latter may be overcome in some instances by intra-urethral measures, but reoperation is often necessary. In the absence of persistent obstruction, the failure of the wound to close is dependent on one of four factors: (1) epithelization of the fistulous tract caused by sewing the bladder to the rectus sheath in patients with very thin abdominal walls; (2) prolonged drainage of the space of Retzius with incomplete closure of the lower angle of the bladder wound in one stage operations; (3) placing the drainage tube in the lower instead of in the upper angle of the wound after the second stage of a two stage operation, and (4) systemic diseases such as diabetes and advanced arteriosclerosis. Reoperation is necessary in the first three groups; in the latter group, fulguration of the wound, multiple small incisions, the application of heat and light, and catheter drainage will usually result in cure of the fistula.

Dr. Irving Simons, Nashville, Tenn.: In regard to postoperative results following prostatectomy, I am glad some one else has difficulty in deciding just how much of the prostatic adenoma to take out. I think the most difficult thing to learn is the decision whether or not to leave certain small areas of induration that exist in the body of the capsule in the cavities left after the main lobes have been enucleated. I do not think that there is any way to learn this except that each person has to learn it for himself. At times these things, when enucleated with the finger, give considerable trouble both in their enucleation and on account of the hemorrhage that follows. I think small portions may be left in, provided they do not protrude too far and cause obstruction. I occasionally see a case in which operation has been done by a colleague, in which there is obstruction afterward that prevents the suprapubic fistula from healing. On one occasion I saw one in which there was complete closure of the bottom of the bladder. The internal urethral orifice was entirely closed over. One of the reasons for such a result is that many operators still believe it is wise to take out the entire prostatic adenoma in one piece. It does look better to the bystander to remove a lump the size of a hen's egg, and while we usually tell them that the removal of a block of urethra an inch and a half long does no harm, I prefer to make several small nicks in the masses in the bladder and take the prostatic adenoma out in small pieces. I think there will be less scarring if this is done. I have never had such a thing as closure at the vesical neck, and I have no trouble with patients reporting that they cannot empty their bladder well.

Dr. Clyde W. Collings, New York: We have used caudal anesthesia for some time in Bellevue Hospital and find it very satisfactory. We have had no toxic effects. In about 10 per cent. of the cases, the anesthesia fails; we think this is on account of the technic. A good many men are doing it, and their methods vary somewhat. Regarding scar tissue contracture after prostatectomy, we have been using the radiotherm high frequency for the past two years, burning through the scar tissue with a specially devised electrode. This has proved very successful.

Referring to Dr. Herbst's paper, during the last few years we have taken out only one prostate for tabes dorsalis. This case is held up as a horrible example to every one. If there is any change whatever in the reflexes, the spinal fluid is examined as a routine procedure.

Dr. B. A. Thomas, Philadelphia: There are two main factors to be considered in the problem of prostatectomy: first, mortality, and second, morbidity. I believe the mortality rate is down nearly to rock bottom, as the result of careful preoperative study of the cardiovascular and urinary systems, the proper choice of an anesthetic, discrimination as to the selection of the suprapubic or perineal route, and refinement of technic. However, I should like to say that I am in favor of neither the spinal nor the caudal route as the method of anesthetic of choice. I think that if patients are properly prepared and qualified for operation, the vast majority of them can be operated on safely under nitrous oxid or even ether or ethylene gas. I do occasionally resort to caudal and transsacral anesthesia in these cases in which I think general anesthesia is contraindicated. Morbidity can be greatly reduced by bearing in mind the subjects presented by Dr. Herbst. Twelve or fourteen years ago there seemed to be two schools of prostatectomists—the one that would not do a suprapubic operation, and the other that refused to do a perineal operation. I took the stand, in a paper presented at that time, that surgeons should stand ready to do either operation and in a given case be prepared to do either the suprapubic or perineal operation, depending on the pathologic changes and the indications. I am more convinced now than ever—and this is borne out in recent years by more surgeons inclining to this practice—that if this discrimination is exercised as a routine the results of prostatectomy, both as to mortality and morbidity, will be greatly improved.

Dr. A. L. Chute, Boston: It seems to me that one must expect toxic effects in a considerable number of cases if one gives a sacral injection of 50 c.c. of a 1 per cent. procain solution. In spinal anesthesia, we give 5 c.c. of a 2 per cent. solution, and occasionally we see toxic effects. Last summer I had two uncomfortable experiences with sacral anesthesia; they occurred within a week of each other and concerned two men from the same town; one was in his forties, with an impassable stricture; the other was in his seventies with an enlarged prostate. I will not say that these patients were any more toxic than some instances of toxicity that I have seen from spinal anesthesia, but they were equally toxic. They were pulseless, pallid and unconscious, and for a short time I feared a fatal outcome. They both came out all right, though we worked over them some little time. In neither case was the injection made into the spinal canal. Some one said that in a small percentage of sacral injections he did not get a good anesthesia. We have had a large percentage of sacral injections in which we did not get satisfactory anesthesia, a much larger percentage than is the case with spinal injections. It seems in my hands that the sacral is less sure and more dangerous than spinal. I dare say it is due to the technic.

Dr. Paul W. Aschner, New York: For some years, in Dr. Beer's service, we have been packing the prostatic bed with thromboplastin soaked gauze and find it very satisfactory in controlling bleeding. I think the preoperative examination should always include a roentgenologic examination to detect silent stone in the kidney, and cystoscopy should include the injection of indigocarmin to be sure of the function on both sides. Epididymitis occurred in 20 per cent. of the prostatic cases in a series I investigated, and I think it is justifiable to do a double vasectomy to prevent epididymitis. Last week a young man entered the neurologic service for sciatica. He was given an epidural injection of procain, 40 c.c. of a 1 per cent. solution, and died within five minutes. A necropsy was held, but no cause was found in the viscera. No spinal examination was permitted. I have seen several bad reactions from sacral anesthesia, and I still depend on gas-oxygen for prostatectomy. I think that any patient who can stand a suprapubic operation can stand gas-oxygen anesthesia.

Dr. W. Calhoun Stirling, Washington, D. C.: I agree with Dr. Chute regarding the value of spinal anesthesia in prostatic surgery. My experience bears out his remarks regarding its low toxicity. I have not found sacral anesthesia to be entirely devoid of toxicity, as is so frequently claimed for it. In the hands of an expert the failures in using sacral anesthesia have been reduced to about 25 per cent. Ethylene gas is proving very satisfactory as an inhalation anesthetic and gives promise of supplanting gas-oxygen in this field. The patient is better relaxed; the skin is pink and there is less asphyxia.

Dr. P. S. Pelouze, Philadelphia: Regarding the morbidity following prostatectomy I can speak only from the cystoscopist's standpoint. One should consider seriously the influences that the patient's own habits of urination may have on his outlook following operative procedures on the bladder. In some of these cases, the act of straining to empty the bladder is unquestionably the cause of complications. The patient subjects the bladder to a high degree of back-pressure, which in itself is a menace. Not only can it keep a suprapubic wound from healing, but it is also a possible cause of the uremia seen in some postoperative cases with the advent of urethral urination. I have seen two cases of diverticulation and many cases of marked trabeculation and sacculation of the bladder in patients without any urinary obstruction whatever, who have given a history of having strained at urination for many years.

Dr. Parker Syms, New York: I have been interested in hearing something that is entirely new to me, and that is of trouble following sacral anesthesia. I have used it extensively since 1918 and have read many reports concerning it, and it is a surprise to me to hear of bad results. They should not occur. I have seen no bad reactions. One must be careful that he is not injecting the fluid into the veins or into the spinal membranes. We have just heard so much of hemorrhage, but I would say that in the operation as performed by myself this is absolutely not a feature. My patients are able to be up and are out of bed the day following their operation.

Dr. Robert H. Herbst, Chicago: Whether we should remove nonretention diverticula is a question. We know that most of them do not produce symptoms after the obstruction at the neck of the bladder is removed. In the average case I should be tempted to leave them alone. I think the reeducation of the prostatic patient in the act of urination is very important. Many of these men have gone through months and even years of obstruction, followed sometimes by a protracted convalescence during which time they have forgotten how to urinate and reeducation is quite necessary. I am told that years ago Samuel Alexander used to line up his prostatic patients and direct them to begin the act of micturition, then call a halt, etc., until they showed ability to control the act. I have seen two cases of diverticula at the neck of the bladder undermining the trigon. The results in both cases have been poor. In one, the patient has a suprapubic fistula months after operation, and in the other the function is far from being good, although I have tried to correct this by doing some plastic work on the neck of the bladder.

PNEUMOCOCCIC AND STREPTOCOCCIC PERITONITIS

REPORT OF TWENTY-THREE CASES IN INFANCY AND CHILDHOOD *

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Pneumococcic and streptococcic peritonitis are the most terrible abdominal catastrophes of infancy and early childhood. The infection is most formidable, being associated with the highest scale of mortality. All the cases forming the basis of this paper were observed within the last three years. The disease under discussion is largely confined to infancy and early childhood and is not as infrequent as commonly supposed, constituting about 10 per cent of the abdominal emergencies of childhood. It merits the serious study of the pediatrician, internist, surgeon and laboratory research worker for several reasons: first, its mortality of 100 per cent places it practically at the head of all the death dealing diseases affecting the young. Secondly, the disease appears to be idiopathic. Our experience at present would indicate that neither medicine nor surgery has anything definite to offer in the salvation of these children. Lastly, it is necessary that the recognition of this malady be placed on a firmer basis than heretofore, and that its comparative frequency be borne in mind.

PATHOGENESIS AND ETIOLOGY

All our cases were due either to the streptococcus or to the pneumococcus. The former was usually of the hemolytic variety. Typing of the pneumococcus was not done except in one or two instances. None of our pneumococcic cases showed a pulmonary lesion throughout the course of the disease, as determined by careful physical and roentgen-ray examinations. Almost every case gave a history of a mild upper

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* From the Surgical and Pediatric Services of the Mount Sinai Hospital.

respiratory infection or of a more or less severe pharyngeal infection. So frequently, indeed, was the latter the case that we were unable to escape the conviction that there exists a direct relationship between the initial coryza or infection of the throat and the occurrence of pneumococcic or streptococcic peritonitis. In four instances, the diphtheria bacillus was found on culture from the pharynx. Assuming that the germ, whether streptococcus or pneumococcus, does not primarily involve the peritoneum, its transfer to the latter may occur through one of several portals of entry:

1. *By the blood stream.* It has been stated by some observers that the peritonitis is always secondary, not to a single focus, but to a bacteremia. In nine of our cases, positive blood cultures were present. The explanation that the bacteria reach and localize in the peritoneum through the blood stream is probably true in the fulminating type of the infection. When the peritonitis develops secondary to some other lesion, as pneumonia, the infection undoubtedly travels to the peritoneum through the blood stream. On the other hand, peritonitis as a complication of pneumonia is exceedingly rare. Rolleston's [1] figures are eleven cases of peritonitis in 4,454 cases of pneumonia.

2. *By the lymphatic route.* The theory that the lymphatic route is a possible avenue of the infection is at variance with all the known facts of pathology. The normal flow of lymph extends in a contrary direction; i. e., toward the thorax. The ravages of the disease are too widespread and too intense for a lymphatic origin. Fraser states that if we accept the lymphatic theory of this infection, we must believe that a massive lymphatic infection occurs; this has no parallel in pathology.

3. *By the genital tract.* Pneumococcic peritonitis particularly affects girls, in the proportion of 3 to 1. Its predominance among girls is strongly suggestive of the genital tract as the portal of entry of the infection, for the peritoneal cavity of the female is in direct communication with the exterior. In the present series, the cases of pneumococcus peritonitis were confined to the female sex, with but one exception. On the other hand, the cases of streptococcus peritonitis were limited to boys. It is recognized generally that gonococcic infection occurs in this way, and strong evidence has been brought forward that some cases of tuberculous peritonitis in girls owe their development to a genital infection. In three of our cases, the pneumococcus was isolated from a vaginal smear, the peritoneum and the blood. The observation has been repeatedly made that the infection is a disease of the poor classes of society. Our observations tend to confirm the belief that it is the dirty, unhygienic child who contracts pneumococcic or streptococcic peritonitis. The anatomic nearness of the rectum and vagina allows virulent pneumococci or streptococci in the feces to produce a direct contamination of the vaginal tract. In women, the acid reaction of the vaginal secretion greatly reduces the tendency to this infection. McCartney and Fraser [2] strongly favor the belief that the genital tract is the portal of entry of the infection.

4. *By the gastro-intestinal tract.* The gastro-intestinal tract as a portal of entry of the infection fits in with the clinical and pathologic studies of this infection.

The ready susceptibility of children and infants to intestinal disturbances is well known to every clinician. The passage of pneumococci from the oral cavity eventually to be excreted with the feces is a simple physiologic process, which has been noted by Jensen and others. Pneumococci are occasionally found in the intestinal flora, but their occurrence is never common. Cases of perforation of the stomach are reported with resulting peritonitis, due to the pneumococcus. Every one of the cases of this series presented some gastro-intestinal disturbances. Experimentally, however, it is almost impossible to produce peritonitis by feeding pneumococci through the mouth. The experiments of Jensen, and McCartney and Fraser were repeated. Young rabbits were fed with a 10 c.c. broth culture of virulent pneumococci, of which 0.001 c.c. was sufficient to cause death in twenty-four hours, when injected subcutaneously.

COMMENT

The clinical and pathologic studies of the present series of cases seem to favor a hematogenous infection originating either in the upper respiratory or in the gastro-intestinal tract. The children affected were all well nourished, varying in age from 3 months to 6 years; only two of the patients were above the age of 4. The number and the age affected were: 3 months, two; 10 months, four; 1 year, six; 2 years, eight; 3 years, one; 4 years, one; 6 years, one.

The course of the infection and the sequence of symptoms presented a striking similarity in all the patients. The disease, in 90 per cent of the cases, was initiated by a definite nose or throat infection, to be followed, within a few days, by abdominal and gastro-intestinal symptoms which then dominated the clinical picture. This triad of clinical events—sore throat or cold, abdominal and gastro-intestinal symptoms, and sepsis—strongly suggest the hematogenous extension of the infection from the upper respiratory and intestinal tract.

A number of factors concerning the development and course of a peritonitis in the child are worthy of discussion, among them (1) the difference in the position of some of the abdominal viscera, with particular reference to the appendix as compared to that of the adult, and (2) the character and manner of the defensive reaction of the peritoneum of the child.

Appendicitis in children under the age of 2 is an uncommon surgical lesion. An analysis was made from the records of the Mount Sinai Hospital of 100 cases of appendicitis in children; only two occurred in children under the age of 2. The youngest patient was 17 months. One case developed at the age of 2, and the remainder between the ages of 5 and 12. This is in common with the experience of other surgical clinics. Marsch, in a review of 9,000 cases of appendicitis, found 1.1 per cent between the ages of 1 and 5. The great infrequency of appendicitis in the nursling is confirmed by a number of studies carried out with this object in view by Majet, Belas and others.

In view of the extraordinary infrequency of appendicitis in infancy, one of our objects in this contribution is to discuss certain aspects of appendicitis and its relation to pneumococcic and streptococcic peritonitis.

The examination of the fetal appendix shows a direct continuation with the apex of the cecum. The proximal portion of the appendix is wide, whereas its distal portion tapers to a narrow point, the organ resembling in its entirety a small funnel. The large base of the fetal appendix and the absence of a cecal pouch below its point of origin overcome any tendency to stasis in the appendix. The further caudal growth of the cecum, particularly the lateral saccule, forms a considerable cecal pouch below the origin of the appendix. The appendix assumes its definite adult position at the posteromedial aspect of the cecum. Westenhofer attributes the great infrequency of appendicitis among Chinese to the fact that the fetal type of appendix is the common anatomic type. Appendicitis similarly is almost unknown in the animal kingdom.

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[1] Rolleston: Clin. J., 1908, p. 319.

[2] McCartney, J. E., and Fraser, John: Pneumococcal Peritonitis, Brit. J. Surg. 9: 479 (April) 1922.

That the fetal type of appendix is one of the causes for the infrequency of appendicitis in infancy is, at least, suggestive. It is further suggestive, in view of the pathologic and clinical findings in peritonitis, that the infection is initiated in the region of the appendix. The occurrence of acute abdominal pain during the course of tonsillitis is a common clinical event. In our series of 100 cases of appendicitis in children, 10 per cent of the cases developed during or immediately after an attack of tonsillitis; in almost every one of the cases a very recent history of one of acute infections of childhood could be traced. The appearance of abdominal pain in children during the course of or following convalescence from tonsillitis is not infrequently of grave significance and demands extreme watchfulness. It means an involvement of the lymphoid tissue in the cecum and appendix, which may eventuate in an appendicitis or peritonitis, depending on the age of the patient. The appendix and cecum about it are rich in lymphoid tissue. The tendency and susceptibility of lymphoid tissue to infection and to the harboring of infection are well known. The finding of the diplococcus in appendicitis in children is very common; Jensen asserts that the pneumococcus is the most frequent infective bacterium. At necropsy our cases of peritonitis showed the maximum disturbance about the cecum. There is no viscus or tissue of the abdomen that is more likely to act as a primary infective focus than the lymphoid content about the cecum and the appendix. Appendicitis similarly is rare in the other extreme of life, old age, as the result of obliterative processes in which the glands and lymphoid tissue disappear.

The second factor influencing the course of a peritonitis in infancy is the character of the defensive reaction of the peritoneum. The defensive reaction of the peritoneum in the young is characterized by an extraordinary rapidity of absorption. The formation of adhesions and the encapsulation of a peritoneal infection are not the usual reactions of infancy. The encapsulation and isolation of a peritoneal infection with dense, hard, organized adhesions is rather a process of adult life, producing in some cases the so-called pseudoneoplastic type of appendicitis described by a number of observers.

Peritonitis in infancy is probably not as infrequent as we believe. Every practitioner of experience has observed cases, attended with meteorism, abdominal pain, vomiting, elevation of temperature and other evidences of sepsis that eventually go on to complete recovery. Not a few of these are instances of peritonitis, with recovery as a result of the great absorptive activity of the peritoneum in infancy. In children beginning with the sixth year, the usual dorsomedial position of the base of the appendix and the slight decrease in absorptive power of the peritoneum, as compared to that of the infant, are factors that tend to produce acute appendicitis and not peritonitis.

PATHOLOGY

In the early stages the exudate is limited to the pelvic peritoneum, revealing itself as a pelvic peritonitis. Later the inflammatory process spreads rapidly, and usually within from twenty-four to seventy-two hours blossoms into a generalized, diffuse, purulent, fulminant peritonitis. No primary focal point is discernible. However, examination of our cases strongly suggests the lymphoid tissue of the base of the cecum as the point of entrance of the infection into the peritoneal cavity, for here, both grossly and microscopically, the pathologic changes seem to be the most advanced. The exudate in the initial stage of the disease is filmy in character, somewhat slimy, distributed between the coils of the intestines and rather small in quantity. Its sticky, oily, slimy character definitely establishes the diagnosis. It is only in the later stages of the peritonitis that the peritoneal exudate takes on a frankly purulent appearance. The exudate is always thin, and is most abundant in the pelvis, even in the terminal stage of the infection.

The intestines when exposed at operation are fiery red, swollen and but slightly distended. The inflammatory process is diffuse. The peritoneal surface of the entire intestinal tract is glistening in appearance and deeply injected. There is an exudate covering the serous coat of the intestine, especially marked around the head of the cecum and duodenum. The head of the pancreas as it fits into the duodenum is often diffusely hemorrhagic. The mesenteric lymph nodes throughout the entire mesentery are palpably enlarged. The head of the cecum in its entirety appears almost gangrenous in many cases. The appendix is similarly red and swollen, but this is only a part of the general peritoneal involvement. The meso-appendix is usually normal in appearance.

In all of our cases either streptococci or pneumococci were isolated. Thirteen showed pneumococci and nine streptococci. The organisms were demonstrated on both smear and culture. It is worthy of note that all of the cases of streptococcic peritonitis were limited to boys, and that only one of the pneumococcic peritonitis cases occurred in the male sex.

Blood cultures were positive in 40 per cent of our cases. The leukocytes and differential counts were high in all cases, ranging from 26,000 to 43,000 and from 89 to 97 per cent of polymorphonuclear leukocytes. The mean leukocyte count was 32,000, with 92 per cent of polymorphonuclear leukocytes. The leukocytes and differential counts are of importance in confirming the diagnosis but apparently have no value from a prognostic standpoint.

SYMPTOMS

The onset is abrupt, with high fever. A previous history of a cold or pharyngeal infection with moderate fever was present in 90 per cent of the cases.

Vomiting is an outstanding symptom. It appears early and is frequently the first symptom that causes the physician to be summoned. It is propulsive and persistent. Even the smallest amounts of liquid are ejected. This symptom persists till the end, and nothing controls it. Diarrhea is a constant symptom at the onset. It may persist but is commonly replaced by constipation.

Abdominal rigidity appears early and is the most characteristic sign of the disease. In the quiet child it is not difficult to recognize. In the crying child, the

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use of a definite technic of examination is helpful. The following method of examination has proved most useful in eliciting abdominal muscular rigidity in crying children (Lowenburg): The tips of the fingers of the outspread hand are gently placed on the abdomen. As the child momentarily ceases its cry, it relaxes its abdominal muscles. At this instant quick pressure, not too hard, is made on the abdomen with all the finger tips; i. e., the finger tips follow the downward movement of the muscles. In the presence of peritonitis, the instant the slightest increase of pressure is made during the moment of relaxation, the muscles, as if recognizing that they have been caught off their guard, will suddenly react by becoming rigid and will rebound; the anterior abdominal wall suddenly seems to come up to meet the finger tips. The latter reaction occurs much more rapidly than the rigidity that normally evidences itself in the crying child. The rigidity is widespread. If peritonitis is not present, there will be no rebound, no sudden rigidity and fixation of the muscles, and the muscles will not stiffen until the child starts to cry again.

Pain and tenderness likewise are present. Older children complain of the former; younger ones do not. There is nothing characteristic about the pain. The tenderness is widespread and corresponds to the area of the rigidity.

Tympanites may or may not be present early. In the later stages, it is constant and gives the abdomen a doughy feel.

Fever begins abruptly and remains high. Occasionally there are remissions. Preagonal rises may reach 107 F.

The evidences of toxemia do not come on as quickly as one would suppose. The brain certainly is spared until the end, although early convulsions have been noted in a few cases. The majority of these babies remain conscious almost to the end. In the beginning, the typical peritoneal facies is absent. In fact, as the child lies in bed it does not look very ill, aside from a flushed face due to fever. For the inexperienced, it is difficult to reconcile the benign facial expression with their knowledge of what is going on within the abdomen. Only in the terminal stage of the infection does the typical abdominal or peritoneal facies become manifest, indicating that death is not far off. In more than half the cases, however, the benign facial expression persists to the very end. Leukocytosis, as has been noted, is always high.

DIAGNOSIS

The clinical picture presented by pneumococcic and streptococcic peritonitis of infancy is quite unmistakable. It is because the clinician omits to think of this disease that its presence escapes him. Unless one has seen a number of these cases, the thought of peritonitis as a possible diagnosis slips from the memory. Once the diagnosis is suggested, careful clinical examination will disclose many confirmatory subjective and objective data.

The initiation of the infection with a sore throat or cold is so constant that it often definitely clinches the diagnosis. One of the outstanding clinical features of the disease is the excessive and persistent vomiting present early and continuing throughout the entire duration of the illness. In a number of cases it was projectile in character, suggesting an intense irritation of the central nervous system. Even water is ejected almost immediately. The general appearance is not that usually observed in cases of peritonitis. The facial expression is not that of a patient profoundly ill and is in great contrast with the definite local signs of peritonitis. This great contrast between the benign appearance and the abdominal findings is of considerable diagnostic significance. The rigidity is widespread and corresponds to the area of pain and tenderness. In primary peritonitis the leukocyte count exceeds 20,000. In our series of twenty-three cases it averaged 32,000, with 92 per cent polymorphonuclears.

The diagnosis in all our cases was confirmed by peritoneal puncture. If peritoneal puncture is performed early, the exudate appears as a drop of glue exuding from the open end of the hub of the needle. Because of the sticky character of the exudate in the initial stage of the infection, its scanty amount and its almost colorless appearance, the peritoneal puncture may seem to give a negative result. Gentle suction with a Luer syringe, however, and careful technic will usually be rewarded by a few drops, and sometimes more, of the exudate. Smears and cultures show either streptococci or pneumococci. Aspiration of the peritoneal cavity for diagnosis seems a safe and perfectly rational procedure. Puncture of the intestines by such procedure is attended with theoretical rather than real danger. We have never experienced any untoward effect, immediate or remote, either from peritoneal puncture done as a diagnostic procedure or from the intraperitoneal injection of saline or other solutions for therapeutic purposes.

It is impossible to distinguish the streptococcic from the pneumococcic type of peritonitis without a peritoneal puncture or without cultural studies made at the time of operation. Blood cultures offer confirmatory evidence but are of little help in forming an early diagnosis. The frequency of the streptococcic form in the male should be borne in mind.

The greatest difficulty arises in distinguishing this form of peritonitis from that associated with or due to a ruptured appendix. Appendicitis, as has been noted, is an uncommon abdominal lesion in children below the age of 3. In appendicitis the temperature is not apt to be so high; the leukocyte count is commonly below 20,000. The patient appears more ill and seems to suffer more acutely; the facial expression is not one of composure, and vomiting is seldom so continuous. Abdominal rigidity and tenderness sooner or later, unless rupture has taken place, become localized to the right lower quadrant. Careful rectal examination often reveals tenderness and fulness on the right side. In appendicitis, constipation is quite the rule, while diarrhea is constant in the early stages of primary peritonitis.

The well known occurrence of abdominal symptoms in cases of acute intrathoracic disease in children may be responsible for much confusion in the recognition of primary peritonitis. Reliance must be placed on careful physical examination of the chest. In cases that continue doubtful, resort must be had to the roentgen ray.

PROGNOSIS

One can only harbor extreme pessimism when confronted with a mortality of 100 per cent. The mortality rate in the experience of other observers does not match the high level reached in the present series. When one reviews a considerable number of reports of cases of pneumococcic peritonitis, one finds that the death rate is misleading, for every type of this infection is inclusively grouped; witness, for example, Koennecke's[3] careful study of twenty-seven cases, with a total mortality of 55 per cent; Rohr's[4] series of eighty-eight cases with 86.3 per cent cured; Jensen's[5] review of some ninety cases with a 64 per cent mortality, and Fraser and McCartney's series, with a 42 per cent mortality. If the cases forming the basis of the foregoing studies are carefully culled and sifted, the mortality of diffuse pneumococcic and streptococcic peritonitis in infants is not far distant from that which we experienced. Rischbreth[6] found a mortality of 88 per cent in collected statistics from the London Hospital.

Considering peritonitis generally, the importance of the age of the patient and the type and character of the infection, particularly the former, sway the balance between recovery and death. The great proportion of our patients were children under the age of 3. In the patients above the age of 6, at which time more definite attempts at localization become evident, the mortality rate tends to drop to lower levels. It is the encapsulated form of peritonitis that gives the lower mortality rate. The encapsulation of peritoneal infections is not the defensive reaction of infancy.

Our mortality forms a striking comparison with the mortality of appendicitis in children. In a series of 100 cases in which operation was performed at the Mount Sinai Hospital, the age of the patients varying from 18 months to 12 years, the total mortality was 1 per cent.

TREATMENT

The problem of treatment is in no way similar to that encountered in the usual type of diffuse peritonitis, for pneumococcic or streptococcic peritonitis present no discernible infective focus; if the latter exists, it is unknown. Eighty per cent of our cases were subjected to laparotomy, drainage of the peritoneal cavity and the routine removal of the appendix. In three of the cases the peritoneal cavity was closed without drainage. Five of the patients were not operated on in the hope that localization might take place. Whether treated surgically or not, the duration and intensity of the infection pursue a similar course. Drainage of the peritoneal cavity in our experience has no effect in arresting the spread of the peritonitis even when the operation is done early. Notwithstanding a mortality of 100 per cent, we believe for two reasons that no alternative other than operation in the very early stage presents itself at present: First, there is always the possibility that an error in diagnosis may have been made in reference to ruptured appendix, and an operation may be the only means of bringing this to light. Secondly, all these cases begin as a pelvic peritonitis. The amount of exudate is at first scanty, later becoming abundant and frankly purulent. It would therefore appear reasonable that some means of exit should be provided for this continuous increase of peritoneal edudate. To delay operation awaiting localization is in our experience an elusive hope. While there is little doubt that pus may be absorbed and disappear from the peritoneal cavity, it is one thing for the peritoneum to absorb pus and quite another for the system to absorb toxins.

Aside from the question of operation, every effort must be made to overcome the profound sepsis that sooner or later dominates the clinical picture. The usual methods of combating the sepsis have been without avail. Mercurochrome-220 soluble, gentian violet, antipneumococcic and antistreptococcic serum, pneumococcus antibody solution, types I, II and III combined, all were equally useless in combating mortality, as were glucose solution and 1 and 2 per cent solutions of sodium chlorid used intraperitoneally, subcutaneously and intravenously.

McCartney and Fraser have suggested early transfusion. To be of use at all, this must supposedly be employed as soon as the evidences of septicemia make their appearance. Later the heart may be so weakened that the quantity of blood to be introduced must necessarily be so small that relatively little beneficial effect can be expected. Transfusion and transfusion exsanguination were also utilized without perceptible effect.

Costain[7] has proposed drainage of the thoracic duct (lymphacostomy) as a useful adjunct for the relief of the toxemia. He reports a complete recovery by this means combined with transfusion exsanguination in one patient with pneumococcic peritonitis, aged 9 years.

In order to establish a definite and exact technic for lymphacostomy, a considerable number of dissections of this structure were carried out at the Baugh Institute of Anatomy of the Jefferson Medical College. Departures from the conventional manner of termination of the thoracic duct are so common that a grouping of the several types of termination becomes necessary.

The operation is in no sense a slight procedure. Aside from the great frequency in the anatomic variations of the thoracic duct itself, its nearness to important neck structures, to the mediastium and to the dome of the left pleural cavity makes it an operation not to be undertaken lightly.

The operation is based on the premise that absorption from the peritoneal cavity is largely by way of the lymphatics. Concerning the problem of absorption from the peritoneal cavity, there exists a great dissimilarity of views. Our own findings, which will be reported in a separate communication, based on experiments on animals rather favor the subperitoneal capillary bed as the major pathway of absorption from the peritoneal cavity.

Lymphacostomy combined with transfusion exsanguination, in addition to a laparotomy and drainage of the peritoneal cavity, was done in two cases; both of these patients died.

SUMMARY

1. Pneumococcic and streptococcic peritonitis is a comparatively frequent abdominal lesion in infancy and early childhood. The great majority of our cases occurred in children under the age of 3.
2. More than 90 per cent of the cases were preceded by a definite pharyngeal infection or coryza, the latter antedating the onset of the abdominal symptom by from four to seven days.
3. The clinical picture is characteristic. Differentiation of the streptococcic from the pneumococcic type can be made only by means of smears or a culture of the exudate.
4. The peritonitis always begins as a pelvic peritonitis.
5. An early operation is recommended to prevent any error in diagnosis and to give an outlet for the peritoneal exudate.

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[3] Koennecke: Beitr. z. klin. Chir. **115**: 408, 1919.
[4] Rohr: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **23**, No. 4.
[5] Jensen: Arch. f. klin. Chir. **69-70**: 1134, 1903.
[6] Rischbreth: Quart. J. Med. **4**: 205, 1910-1911.
[7] Costain, W. A.: *Lymphaticostomy in Peritonitis*, Surg., Gynec. & Obst. **36**: 365 (March) 1923.

6. All supplementary measures directed toward overcoming the profound sepsis that sooner or later dominates the clinical picture have been in our experience without avail.

1007 Spruce Street—325 South Seventeenth Street.

A CASE OF INFANTILE DIABETES TREATED WITH INSULIN

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AND
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Infantile diabetes is comparatively rare, and until the advent of insulin such cases presented a grave prognosis. Even when the diabetic baby lived for a time, its development and nutrition were greatly retarded. Insufficient time has elapsed to permit one to say with authority what will be the ultimate outcome of the infantile cases treated with insulin, but the few reports that have appeared to date seem encouraging. Joslin, Root and White[1] have reported the results in a group of patients with the onset of diabetes between the ages of 1 and 5 years; Allen and Sherrill[2] have reported the early treatment of an infant, aged 15 months; Major and Curran[3] employed insulin in a diabetic infant, aged 11 months, with cataracts and Schippers[4] treated an infant, aged 8 months, with a fatal termination after fourteen months of treatment. The following report covers eighteen months' treatment of an infant in whom diabetes was discovered at 16 months of age:

REPORT OF CASE

History.—A male infant, aged 16 months, was seen, May 4, 1924, because of marked drowsiness and constipation. The family history was negative. The past history was essentially negative for delivery, general health and development. For about one month, the mother had noticed that the child had had a ravenous appetite. The frequency of urination had been increased, and for ten days there had been excoriation of the pubic region. There had been a rapid loss of weight from about 26 pounds (12 Kg.). There had been no bowel movement for two days.

Physical Examination.—The patient's height was 32⅞ inches (83.5 cm.), and his weight was 20 pounds (9 Kg.). He appeared acutely ill. The expression was dull; there was marked drowsiness; the skin was pale, cool and dry; the eyes were sunken, and there was a fruity odor to the breath. Digital examination revealed a fecal impaction. The remainder of the examination gave normal findings.

A casual specimen of urine contained 3.5 per cent of sugar and gave a four plus reaction for diacetic acid. The blood Wassermann reaction was negative.

Course.—The fecal impaction was relieved digitally, and the child was admitted to a hospital for treatment. A soda enema was given, followed by proctoclysis of physiologic sodium chlorid solution. Five units of insulin was given at once, and repeated in three and six hours; each dose of insulin was accompanied by the administration of 50 cc. of orange juice by mouth. Several hours after the third dose of insulin, a casual specimen of urine was sugar free, and the reaction for diacetic acid was less marked. Starting the second day, a diluted milk, cream and oatmeal gruel formula was employed, yielding approximately: carbohydrate, 34 Gm.; protein, 17 Gm., and fat, 40 Gm. Nine units of insulin was given in two doses, morning and evening. The baby's general condition and appearance improved rapidly, but on the fourth day he weighed only 19 pounds. The diet and insulin dosage were rearranged gradually, and the patient was discharged on the tenth day, weighing 20½ pounds, on a diet of carbohydrate, 32 Gm.; protein, 25 Gm., and fat, 80 Gm., with an insulin dosage of 20 units in three doses. The diet consisted of a formula made up of milk, 400 cc.; 20 per cent cream, 210 cc.; olive oil, 15 cc.; one egg yolk; oatmeal, 7.5 Gm., and sufficient water to make 32 ounces (950 cc.) or four 8 ounce feedings. Two weeks later, the diet was increased by the addition of milk and cream to carbohydrate, 37 Gm.; protein, 28 Gm., and fat, 86 Gm., and the insulin dosage was increased to 25 units daily in three doses. Several times weekly a small amount of orange juice or cod liver oil was given in addition. For the last seventeen months the patient has refused to take any other diet than the foregoing formula, with the exception of an occasional small amount of carrots. During July, 1924, the insulin dosage was increased to 30 units daily in three doses, and since March, 1925, it has been changed gradually to two daily doses of 6 units in the morning and 4 units in the afternoon. Although the patient has rarely been sugar-free for an entire day, his development has been practically normal. Nov. 5, 1925, eighteen months after the beginning of treatment, his height was 36¼ inches (92 cm.) and his weight was 28 pounds (12.7 Kg.).

COMMENT

The striking feature in this case has been the practically normal increase in height, in contrast to the stunting of growth that was observed in diabetic children before the advent of insulin. This baby was about 1 inch taller[5] at the onset of diabetes than the average normal at that age; he has increased 3⅜ inches (8.6 cm.) in height during eighteen months, which gives him normal height for his age. He was several pounds overweight at onset, but the exact amount is not known; he has gained 9 pounds (4.1 Kg.) during eighteen months and is now about 2 pounds, or 7 per cent, underweight. This degree of undernutrition has been maintained intentionally, because Joslin has shown that a moderate degree of undernutrition is a distinct advantage to the diabetic patient. Joslin's group of cases displays about the same increases in height and weight.

The management of the diabetic infant presents problems that are not encountered in the treatment of older patients. This case has been successfully managed without blood sugar determinations, but we do not recommend the disregard of this helpful adjunct to the control of treatment. Blood sugar readings have seemed valueless in this case because of the apparent lability of the metabolic processes in this child, an observation that was also made by Major and Curran in their patient. We have frequently observed in from two to three hours' time a change from a urine that was free of sugar and diacetic acid to a specimen loaded with both.

Insulin reactions could be recognized only by objective symptoms, since the patient is unable to communicate his subjective feelings. The reactions usually appeared during the night. The child would awaken suddenly and cry out loudly. The skin would be pale, cold and covered with a profuse perspiration. A specimen of urine obtained at this time was always sugar free, and after receiving several ounces of orange juice the patient always became quiet and fell asleep.

Because of the difficulty in recognizing hypoglycemic reactions before they were well developed and because

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1. Joslin, E. P.; Root, H. F., and White, Priscilla: The Growth, Development and Prognosis of Diabetic Children, J. A. M. A. **85**: 420 (Aug. 8) 1925.
2. Allen, F. M., and Sherrill, J. W.: Clinical Observations with Insulin, J. Metabol. Research **2**: 803 (Nov.-Dec.) 1922.
3. Major, R. H., and Curran, E. J.: Diabetic Cataracts in an Infant, J. A. M. A. **84**: 674 (Feb. 28) 1925.
4. Schippers, J. C.: Diabetes Mellitus in an Infant Aged Eight Months Treated with Insulin, Am. J. Dis. Child. **30**: 336 (Sept.) 1925.
5. Normal Standards of Height and Weight Taken from Tables of National Child Health Council.

of the apparently very rapid change in blood sugar levels, the attempt to keep the urine constantly sugar free was abandoned. As the patient has grown older, this apparent lability of metabolism has decreased somewhat, and consequently it has been possible to decrease the insulin dosage slightly and give it in two daily injections instead of three.

The decrease in insulin dosage while taking a quite constant and uniform diet suggests some improvement in tolerance. However, this apparent improvement may result to some extent from the fact that since gaining weight the patient has received less food per unit of body weight.

This patient is fortunate in having a very intelligent and cooperative mother, thus making the opportunity for observation almost ideal. His further development will be watched with interest.

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EFFECT OF COMPOUND SOLUTION OF IODIN AND REST IN SURGERY OF EXOPHTHALMIC GOITER *

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For many years, iodin has been known to be of value in the treatment of disorders of the thyroid gland. Marine, in 1911, showed that iodin would produce involution in a hyperplastic thyroid gland and recommended the use of iodin to prevent hyperplasia of the thyroid. Neisser used potassium iodid in 1920 for treating exophthalmic goiter and reported definite improvement in eight cases. Loewy and Zondek, in 1921, published a similar series of results. Dr. H. S. Plummer was the first to show conclusively the great value of iodin in the treatment of exophthalmic goiter, and to him the credit for the present extensive clinical application of this medicine must be given.

Compound solution of iodin (Lugol's solution) has been used in 200 cases of primary hyperthyroidism in the clinic. Many patients come to the clinic who have had iodin in this or some other form, in length of time varying from a few days to two years. Many of our earlier patients were given the solution irregularly. Many of the cases are too recent for analysis or have data too incomplete to permit analysis. Out of the entire group, sixty-nine cases have been selected for detailed study. These cases have been selected, first, because they were all cases of severe primary hyperthyroidism; secondly, because none of the patients had had iodin before admission, and thirdly, because all received iodin and were carefully followed with basal metabolic studies before and after operation. None of the other cases were omitted from this group for any reason other than incomplete data or irregular, uncontrolled or unknown iodin medication.

As nearly as possible, the patients have been treated throughout their illness along the same general plan. They have been kept in bed after admission to the hospital, with the exception of a few less severely toxic cases, who have been given lavatory privileges. Fluids have been given as freely as possible, and every patient has been urged to eat as much food as possible. Extra meals have been given whenever the patient could eat them. During this period, the total calories consumed have averaged from 2,600 to 2,900 in twenty-four hours. On the morning after admission, a basal metabolic test has been done, and this test repeated either daily or every other day while waiting for operation.

In patients not dangerously ill, we have waited until after the first metabolic test before giving compound solution of iodin. The treatment of the severely toxic cases has consisted of the immediate administration of the solution without waiting for the preliminary metabolism tests. In treating the latter type of case, we have endeavored to give from 50 to 100 minims (3 to 6 c.c.) of the drug within the first twenty-four hours after admission. It has been given in divided doses of 5 or 10 minims (0.3 or 0.6 c.c.) each, by mouth and rectum. It may be given subpectorally, if necessary, well diluted in salt solution.

The drug should be well diluted whether given by mouth or by rectum, and 5 minim doses given repeatedly are preferable to single large doses. We have found that compound solution of iodin diluted with cool water is not unpleasant to most patients. Occasionally it is preferably diluted with milk. It may be given by dropping the requisite amount on a piece of dry bread.

To the patients not dangerously ill on admission, we have given 10 minims of the solution three times a day. This is continued during the preoperative period and for several days after operation. In cases in which we have anticipated a serious postoperative reaction, we have doubled this dose on the day preceding and the day of the operation. It is essential that the drug be continued through the operative period if reactions are to be avoided.

When we have performed a subtotal thyroidectomy in multiple stages, we have continued the use of compound solution of iodin during the entire interval between the operations. It has been our custom to give but 10 drops a day, however, during these intervals. In general, the use of the solution has been omitted four or five days after the operation is completed.

The effect of iodin on the structure of the thyroid has recently been studied microscopically by Dr. R. B. Cattell in this clinic. He has shown that both the iodin content of the hyperplastic gland and its pathologic structure are changed markedly by sufficient iodin therapy. The papillary projections with high epithelium are replaced by vesicles lined with low epithelium and filled with colloid material after iodin administration. The iodin content of 200 glands has been studied by Dr. Cattell, and he has shown a direct ratio between the degree of involution and the iodin content. It has repeatedly been shown that the iodin content of the thyroid is inversely proportionate to the degree of hyperplasia.

Exophthalmic goiter patients who have received large amounts of iodin have invariably shown marked increase in the iodin content of the thyroid gland, and 87.9 per cent. of all of these glands that he has examined have shown involution. It is true, however, that there is a very definite group of patients who show marked involution histologically and a high iodin content in the gland and who, nevertheless, show clinically the presence of severe hyperthyroidism.

To demonstrate in what way and to what extent compound solution of iodin alone affects the symptoms of primary hyperthyroidism is impossible. There are many factors present in the hospitalized patient which may well influence the course of the disease. Of these, rest is most important. We have long known that com-

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* From the Lahey Clinic, Boston.

plete rest in bed would temporarily, at least, help many of the nervous symptoms of thyroidism. In a few cases, we have kept the patient at complete rest, with no medication for periods of from four days to three weeks, and have never failed to observe at least some slight improvement, due probably to a lessening of the metabolic burden (Chart 1). Hospital routine, regularity of life and freedom from cares and visitors are other factors of importance in the improvement. All of the sixty-nine patients spent at least seven days in bed in the hospital previous to their operation, and some of them spent a much longer time.

There are certain factors which have been constant in our treatment of all cases of primary hyperthyroidism during the last few years whether they have received iodin or not. Every patient has been operated on by the same surgeons, and in nearly every case, has been anesthetized by the same anesthetist. Practically every case has been treated in either the New England Deaconness Hospital or the New England Baptist Hospital and has thus received a very similar type of nursing care. This constancy of factors gives an increased value to such observations as can be made. The same group who five years ago decided what operative procedures an individual patient could endure are deciding this problem today.

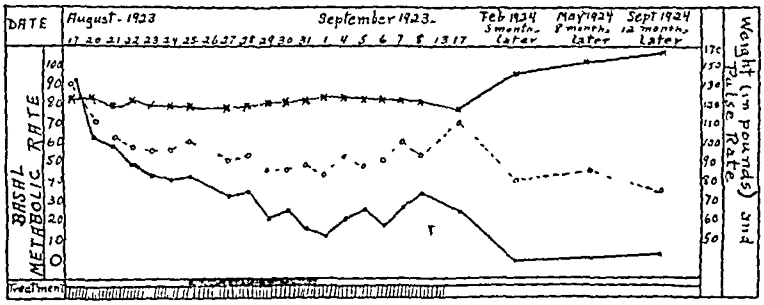

Chart 1.—Effect of rest in bed, compound solution of iodin and subtotal thyroidectomy in a severe case of exophthalmic goiter followed carefully for more than a year: Solid line, basal metabolic rate, broken line, resting pulse rate; lines with crosses, weight in pounds (pulse rate and weight shown at right of chart). At the bottom of the chart, the solid black area indicates days treatment with compound solution of iodin, and the cross hatch indicates rest in bed, *T*, subtotal thyroidectomy.

There has been a decided alteration in both the number and the type of operations since the addition of compound solution of iodin and rest to the treatment.

Dr. S. M. Jordan found that in 533 cases of primary hyperthyroidism treated before we began the use of iodin, 38 per cent. of the patients were operated on in one stage and the remaining 62 per cent. in multiple stages. Thus, 35 per cent. had the operation done in two stages, 20 per cent. in three stages, 6 per cent. in four stages and 1 per cent. in more than four stages. Since only compound solution of iodin and rest in bed have been added to the previously established plan of treatment, any change in results may be attributed to these additions.

In the group of sixty-nine cases, these figures are almost exactly reversed, 63.7 per cent. of the patients having the operation completed in one stage, and 36.3 per cent. requiring multiple stage operations. Thus, 21.7 per cent. had two operations; 5.7 per cent. had three operations; 4.5 per cent. had four operations; 1.4 per cent. had five operations, and 2.9 per cent. had preliminary operations only. Of these sixty-nine patients, only 13 per cent. had pole ligations as preliminary measures to the removal of the gland. All others in the group had for their first operation a procedure directed toward removing some part of the gland. In Dr. Jordan's series of cases, about 51 per cent., or more than half the patients, had ligation of one or more poles as a preliminary preparation for thyroidectomy. We believe that in some of the sixty-nine cases ligations were performed in which now, after an extensive experience with compound solution of iodin, a hemithyroidectomy might have been done. For example, during the first five months of 1925, operation has been performed in eighty-five cases of primary hyperthyroidism. Fourteen of these patients have required two operations, each a hemithyroidectomy, and in seventy-one, operation was completed in one stage. No pole ligations have been necessary in this group. It is apparent that the addition of compound solution of iodin and rest in bed to the treatment has decreased the number of multiple stage operations necessary and has largely eliminated pole ligation as a preliminary procedure.

In this series, the average metabolic rate on admission to the hospital was + 77. After rest in bed and the administration of compound solution of iodin, the basal metabolic rate before operation averaged + 47 for the group. There was, therefore, an average drop of 30 points, which can be ascribed to the influence of rest and the solution. It is necessary to note what percentage of patients showed no drop in rate and what effect the rate drop may have had on the patients' ability to withstand operations. Five patients out of the sixty-nine (7.2 per cent.) failed to show the usual or a satisfactory drop in metabolic rate after taking the solution. In one of these five cases, the rate showed no variation, and in another it rose two points. There were six other patients who showed no evidence of clinical improvement after taking the solution, although each of the six showed a well marked drop in metabolic rate. It is important at this point to state that the degree of drop in basal metabolic rate following the administration of compound solution of iodin is not a reliable guide to the extent of the patient's ability to withstand operation. The following case illustrated this point very clearly to us early in our experience with the solution:

A man, aged 50, severely toxic with primary hyperthyroidism and also suffering from diabetes, was given compound solution of iodin and rest in bed. His diabetes was readily controlled by Dr. E. P. Joslin. The metabolism on admission was + 72. This fell in nine days to + 24 and clinically the patient was strikingly improved. He was operated on and a subtotal thyroidectomy was done in one stage. The condition during the operation was most satisfactory, the pulse rate at no time being elevated above 120. Ten hours after operation, the patient developed a most severe postoperative thyroid reaction, and, in spite of large doses of compound solution of iodin and of all other measures, died in intense thyroidism. This case resembled in every way the reaction we had been accustomed to see in patients who had had no compound solution of iodin.

In six of the eleven patients to whom we have said that the solution was of no apparent benefit although the rate fell appreciably, multiple operations were thought necessary. We believe that a patient entering the hospital with extreme thyroidism must still be looked on as a serious risk regardless of the drop in metabolic rate after the administration of compound solution of iodin. The symptomatic improvement noted following the administration of the solution and rest in bed is frequently very marked. As Plummer has stated, the nervous symptoms are particularly affected. The delirium of hyperthyroidism has disappeared more quickly than we have heretofore seen it disappear. The tremor is often less marked and so also is the patient's sensation of unrest and "nervousness." The pulse rate usually averages much lower, and the patient frequently states that her heart no longer pounds as hard as before admission. In some few cases the degree of exophthalmos has grown distinctly less. We have seen no marked increase in weight during the administration of the solution. Although we have not infrequently noted improvement in symptoms in patients who were resting in bed with no medication, we are convinced that we never have seen such constant and radical improvement with rest alone as we have observed when compound solution of iodin was added to the treatment.

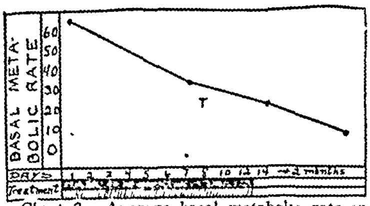

Chart 2.—Average basal metabolic rate in forty-four cases of exophthalmic goiter treated with rest in bed, compound solution of iodin and subtotal thyroidectomy in one stage. Solid black line at base of chart, days of compound solution of iodin administration; cross hatch, days in bed; *T*, subtotal thyroidectomy. Metabolic rate taken two months after operation in twenty five of these cases.

Calamities may result even while patients are under treatment with the solution, as was shown by the following case:

> A woman, seen early in our experience with compound solution of iodin, severely ill with primary hyperthyroidism, entered the hospital with a metabolic rate of + 84. Under treatment with the solution and rest in bed, the metabolic rate fell to + 43. Aften ten days, the patient was operated on. Both superior poles were ligated with little postoperative reaction. A week later, she left the hospital to rest at home in preparation for the next operation. She took 10 drops of compound solution of iodin daily after leaving the hospital and was apparently improving rapidly. About one month later, she was greatly upset by the screams of a child injured by an automobile in front of her home. Two days after this, the patient returned to the hospital suffering from a severe exacerbation of thyroidism with nausea, vomiting, diarrhea and delirium. She was given large doses of the solution in addition to morphin and forced fluids, but without improvement. She died after two days of uncontrollable hyperthyroidism.

We have noticed in many patients an improvement in metabolic rate with no accompanying change in subjective feelings. The individual patients vary so greatly in their estimates of how they feel that no great emphasis can be placed on this point alone. It is true, nevertheless, that we not infrequently find patients who have had a well marked drop in metabolic rate and pulse rate and yet can note no change subjectively. All of these patients have felt markedly improved after thyroidectomy.

The postoperative course of these patients after preparation for operation with compound solution of iodin and rest is entirely different from that to which we had been accustomed before employing it. A severe postoperative thyroid reaction is now almost unknown. In this group of sixty-nine cases there was but one, the patient already mentioned on whom we performed a subtotal thyroidectomy, because of the marked improvement in the metabolic rate. The general condition of the case after operation is rarely such as to cause any anxiety. The pulse rate rarely goes above 160 even in the most severely toxic case, and the incidence of postoperative auricular fibrillation is much less. Increased tremor, wild excitement and great restlessness are not seen.

A subtotal thyroidectomy was done in one operation in forty-four of this group of sixty-nine cases. With the exception of the case already mentioned, of severe thyroidism plus diabetes, there was little or no postoperative thyroid reaction in any patient. As is shown in Chart 2, the average metabolic rate for the forty-four patients was + 66. With rest and the administration of compound solution of iodin, this rate fell to + 36 in seven days. Six days after operation, the average rate was + 22. In twenty-five cases of this group that we examined subsequently, the average rate two months after operation was + 8. Although the graphic chart does not show it, we have found that metabolic rates below normal are more frequent since the use of compound solution of iodin. In those cases having had the solution, we believe that, because of the involution of the thyroid tissue, it is wise to leave a larger section of thyroid gland behind than has heretofore been the custom.

In certain cases, the rate has been still elevated after thyroidectomy, although clinically the patient has been much improved. It is usual in these patients for the metabolic rate to reach normal within from two to four months after operation.

In eleven cases in this group, the operation was divided into two stages, each of which was a subtotal hemithyroidectomy. Some of these operations would now be done in one stage, since we are more familiar with the condition of patients after treatment with compound solution of iodin and with their ability to withstand operation. The average rate of this group of eleven cases on admission was + 62, which fell after a week of treatment to + 39 (Chart 3). After subtotal hemithyroidectomy, the average rate of the group was + 26. It is to be noted in Chart 3 that during the interval between operations the average metabolic rate rises in this group to + 33. After the second hemithyroidectomy, the rate fell rapidly to + 15, and the average rate for the group two months later was + 11. It is seen from this chart that the general trend of the metabolic rate drop is about the same whether the operation is a subtotal thyroidectomy or two subtotal hemithyroidectomies. It is particularly interesting to note that one week after a subtotal thyroidectomy, the rate is only 3 points lower, on the average, than one week after a subtotal hemithyroidectomy. Certainly a comparison of the final results in these two charts leaves no doubt that the removal of the gland by two subtotal hemithyroidectomies gives results fully as satisfactory from the point of view of the drop in metabolism, as a subtotal thyroidectomy in one stage. The clinical improvement corresponds to this change in metabolic

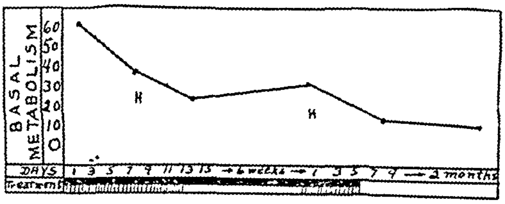

Chart 3.—Effect of rest in bed, compound solution of iodin and thyroidectomy in two stages — right and left subtotal hemithyroidectomy — in eleven cases of hyperthyroidism: Solid black area at base of chart, days of compound solution of iodin; cross hatch, rest in bed; *H*, subtotal hemithyroidectomy.

rate. For this reason, we feel that whenever the patient's behavior on the operating table is such as to cause the slightest doubt as to her ability to withstand the entire operation in one stage, there should be no hesitation in dividing the operation and removing but one half of the gland at this time.

In Chart 4 are grouped seven patients, each of whom had at least three operations. These operations consisted of superior or inferior pole ligations, followed by two hemithyroidectomies. In some of the cases, the poles were tied one at a time on different days so that, in one case, the patient made five trips to the operating room before the thyroidectomy was complete. The average rate of this group on admission to the hospital was + 87, which fell only to + 56 under preoperative treatment with compound solution of iodin. It is to be noted that these ligations produced only a 6 point drop in metabolic rate on the average in these cases, and that there was a marked rise in rate to + 74 during the six weeks interval before the first hemithyroidectomy. Furthermore, although there was an average drop of 23 points in the metabolic rate after this first hemithyroidectomy, the rate after this operation was still 3 points higher than it had been after the ligations.

During the six weeks interval preceding the final hemithyroidectomy, the rate again rose, reaching + 64. On discharge, the average rate for the group was + 42.

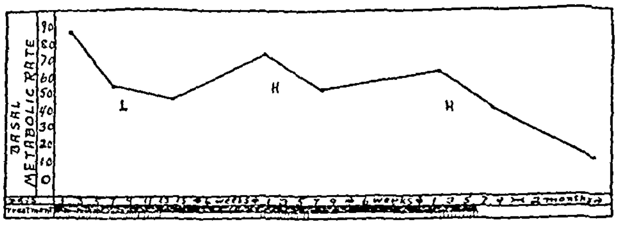

Chart 4.—Effect of rest in bed, compound solution of iodin and multiple stage operation on the basal rate in seven cases of severe hyperthyroidism: *L*, one or more ligations; *H*, subtotal hemithyroidectomy; solid black area at base of chart, days of compound solution of iodin; cross hatch, rest in bed.

Two months later, the rate in the four cases that have been seen was normal. From these cases and the next group to be mentioned, we have the impression that pole ligation does not produce as beneficial effects when compound solution of iodin is being used as was the case before this medicine was adopted. On the other hand, it is obvious that in this group of patients the metabolic rate was higher to start with and the patients were more seriously ill than in either of the preceding groups.

In only one case in this series did we tie both superior poles at one operation and follow this in six weeks with a subtotal thyroidectomy. In this patient, the metabolic rate was + 86 on entrance and fell to + 54 under treatment with the solution. After ligation of both poles, the rate rose to + 79. The patient remained in the hospital under our observation while waiting for the second operation. The rate rose during this interval of seven weeks to + 85. A subtotal thyroidectomy was performed and presented no technical difficulties. As the operation was about to be completed, the patient's heart, which had been regular at a rate of 140, suddenly ceased beating and the patient was dead. What the pathologic basis for this occurrence was, we are unable to state. In one other patient, both superior poles were tied at one operation with apparently good results. This woman, however, as has been shown earlier in the paper, returned to the clinic four weeks later to die of severe thyroidism before any further operation could be attempted. The pole ligation had been of no value in preventing this occurrence.

We have frequently observed the effect of administering compound solution of iodin over long periods without any operation for removal of the thyroid tissue. It appears that in such cases the beneficial results persist for a period of time varying from a few weeks to six months. At no time in this period is the patient completely well even though she is benefited by the treatment. Exertion results in rapid and pounding heart action and abnormal fatigue. The patient is still toxic and so remains until effectual measures for the elimination of toxicity are completed. Furthermore, we frequently see patients who have taken compound solution of iodin for many months before admission, who have first improved clinically and have then returned to their previous condition of toxicity or a more serious one. In these cases, we have not been able to obtain any marked improvement by rest in bed and administration of the solution. In many cases we have noticed that the metabolic rate will drop with the use of the solution and rest to a well marked degree. If then the solution is omitted, the rate rises to a higher level than before and will not again return to its former level for some weeks.

Two deductions may be made from these observations. First, that there is a certain time, usually within two or three weeks of the beginning of the administration of compound solution of iodin, in which the metabolic rate drop is greatest and the clinical improvement most marked. This is the optimal time for operation on the thyroid gland. Operation at this time offers the patient the greatest degree of safety with the fewest possible operative stages. Once lost, this opportunity does not soon return, if it ever returns at all. The second point to be made is that once started, the administration of compound solution of iodin in a case of primary hyperthyroidism should be continued unless it is obvious that the patient is being injured. Once the solution has benefited a patient, its withdrawal without thyroidectomy results in an increase in the toxicity.

There is now a new group of patients coming to the clinic for diagnosis and treatment. In many cases of suspected primary hyperthyroidism, the patients are receiving compound solution of iodin in varying amounts from their family physicians. From their history, some of these have undoubtedly never suffered from thyroidism and are not helped by taking the solution. In other cases, however, the past history is often very suggestive of thyroidism which has been benefited by iodin. In this borderline type of case, the diagnosis is already difficult, and the distortion of the symptomatology by the administration of compound solution of iodin may well render it impossible. At present the wisest course seems to be the omission of further iodin medication, and the reexamination of the patient after an interval of two months. Furthermore, we have found that compound solution of iodin or some other form of iodin medication is given indiscriminately whenever a goiter is discovered, no attempt being made to diagnose the type of thyroid enlargement. This practice has repeatedly resulted in the production of toxicity in benign goiters. It is essential that large doses of iodin shall be given only to patients suffering from exophthalmic goiter.

CONCLUSIONS

1. Compound solution of iodin has been used in the treatment of 200 cases of primary hyperthyroidism in the Lahey Clinic. A study has been made of the effects of this treatment in this group of cases, of which

sixty-nine have been especially selected for detailed presentation.

2. Rest in bed for from seven to ten days before operation is of great importance in preoperative preparation.

3. Before the use of this solution and rest in bed, only 38 per cent. of the patients were operated on in one stage. Since the use of the solution and rest in bed preoperatively, 63.7 per cent. have been operated on in one stage.

4. The number of pole ligations has decreased from 51 per cent. in the past, to 13 per cent. in this series of cases. In the eighty-five cases of primary hyperthyroidism in which operation was performed during the first five months of this year, no pole ligation has been necessary.

5. Of the patients in this group, 7.2 per cent. failed to show an appreciable drop in metabolic rate after the use of the solution and rest.

6. The results following subtotal thyroidectomy performed in one operation or by two hemithyroidectomies are similar.

7. Iodin administered over long periods without thyroidectomy does not cure exophthalmic goiter. Thyroidectomy must be added to produce a complete return to normal health.

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AN OUTBREAK OF FOOD POISONING PROBABLY DUE TO "RAT VIRUS"*

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A typical outbreak of gastro-enteritis was reported, Oct. 23, 1924. The cases were restricted to about 140 persons of 225 eating regularly at the dining room of the women's hall of West Virginia University. Of 193 girl students questioned, 124 were affected with an acute gastro-enteritis, preceded by cramps, chills and fever, and vomiting, and accompanied by muscular pains, diarrhea and prostration. All made a prompt and uneventful recovery. The earliest case reported began at midnight Monday, October 20. Other cases followed rapidly, 109 cases being reported on Tuesday, thirteen on Wednesday, and one mild and atypical case on Thursday. On Wednesday, forty-five girls were prostrated in bed. The peak was between noon and 6 p. m. Tuesday, when thirty-three cases were reported. Subsequent study based on written questionnaires traced the source of trouble beyond reasonable doubt to the Monday noon meal.

During the period of a week preceding to a week subsequent to this outbreak, only two other cases of similar disturbance are known to have occurred in the city of 13,000 population. These were in adults in no way associated with the university, nor was their source traceable.

The sole source of water for the hall comes from the city mains, which furnish a filtered and chlorinated river water. Seven tests on consecutive days of samples from the serving room tap showed a total count of less than 10 colonies per cubic centimeter and no gas in any of five 10 c.c. portions on any of the tests.

The women's hall obtains daily from the university dairy 20 gallons of pasteurized milk and 3 gallons of pasteurized "table cream." Previous to October 21, all milk was pasteurized in a coil pasteurizer on which a record of time and temperature is not available. October 21, a new vat pasteurizer was put into operation, and permanent records are available from this date. The record of bacterial counts made by the dairy department a week after the outbreak shows that the milk had a low count before and after pasteurization. Examination of the payroll of the dairy force showed no loss of time from illness for thirty days preceding the outbreak.

Inquiry of some forty persons living in the city who obtained from 2 to 6 quarts of milk daily from the university dairy revealed no cases of similar disturbance. Furthermore, some 300 pints of milk are drunk daily at the counter by students. No students are known to have been affected except those eating at the hall.

Because the outbreak was not referred to the department of bacteriology until three days after its occurrence, no food except a portion of liver used on Monday was available for examination. Cultures of this liver revealed nothing of significance, and rabbits and guinea-pigs fed and inoculated intraperitoneally with emulsions of it showed no symptoms of intoxication. The butter used at the hall was obtained from a commercial source supplying a large amount to city trade. Only two cases are known to have occurred outside the university, and one of these developed in a person who uses only oleomargarin.

The menu of Monday noon included cold boiled ham, mustard, potato salad, pickled beets, boiled rice and maple syrup, and milk. Data from the questionnaire returned by 199 girls showed no correlation of illness and consumption of any single food. Furthermore, fifty-four girls who were not ill, but who were present at the noon meal, were individually questioned, particularly as to having eaten the ham and salad and as to drinking milk. Again, freedom from illness did not check with avoidance of any food.

However, when data on drinking milk were grouped, it was noted that 65 per cent. of those who were ill drank milk, while only 27.5 per cent. of those not ill drank milk. These, and other data pertaining to the use of cream, indicated that the rate of attack was directly proportionate to the use of milk and cream at the noon meal. These ratios obtained most strikingly among those drinking milk at the noon meal, and were evident to a lesser degree among those present and drinking milk at the evening meal. The attack rate among a small group absent at the noon meal but present in the evening suggested that the causative factor was active to a lesser degree in the evening as well. The only articles common to the two meals were milk and cream, and it is believed that the data available show milk to have been the vehicle of infection.

Nine blood cultures were taken, October 24, from selected acute cases. None yielded any member of the paratyphoid type. Two gave growths of staphylococci and one of streptococci. The others were sterile.

Rectal swabs from thirty-five acute cases were plated directly on Endo medium, and also on this medium after eight hours' incubation of the swabs in 0.5 per cent. glucose broth. By direct inoculation two cases yielded heavy, practically pure cultures of typical paratyphoid growth. Twelve cases gave a predominating paratyphoid type mixed with colon types. Eleven cases gave from a few to numerous paratyphoid-like colonies mixed with other organisms. Ten cases did not yield any recognizable paratyphoid types. Inoculation of the glucose broth swabs on Endo medium gave paratyphoid-like colonies on all of those which had shown this type on direct inoculation, and on four of those which were negative on direct inoculation.

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Thus, of thirty-five acute cases paratyphoid-like colonies were isolated from twenty-nine. All cultures were replated, and single colonies were picked to Russell medium and to agar slants for stock. Five strains were discarded on the basis of the Russell reaction, the others giving typical paratyphoid reaction. Further study of these cultures is discussed later.

On the eighth day after the outbreak, fecal and urine swabs were obtained from seven of the regular cooking staff, and from eleven waiters engaged regularly in serving food. Of twenty-four persons on active service, twelve had reported more or less serious attacks.

Urine cultures yielded nothing of significance in any case. Suspicious cultures were isolated from fecal swabs of four waiters, all of whom had been ill, and from one kitchen girl (M. C.) who was ill. Later study of the M. C. strain showed it to be a typical paratyphoid bacillus, while the waiter strains were ruled out by a delayed lactose fermentation.

Macroscopic agglutination was negative for all strains against a *B. schottmuelleri* antiserum, while the homologous control strain (Chicago B 12) agglutinated to the full titer (1:6,400). The test was positive for fourteen student strains and for the M. C. strain to the full titer of a *B. enteritidis* antiserum (1:6,400), and was negative for ten student strains and for the four waiter strains.

Ten of the agglutinating strains and the ten nonagglutinating strains were inoculated into differential mediums, including twenty-seven carbohydrates. These carbohydrates were prepared in distilled water, filtered by suction through Mandler candles, and added aseptically to a sterile egg-water broth with the Andrade indicator previously described[1] to make a final concentration of 1 per cent. The mediums were tubed aseptically and incubated forty-eight hours for sterility. In the case of dextrin, starch and glycogen it was impossible to filter, and these were autoclaved for ten minutes at 15 pounds' pressure.

Cultural Characteristics.—A. Ten Agglutinative Strains: All were motile, gram-negative bacilli of the paratyphosus size and form. None liquefied gelatin or produced indol; all blackened lead acetate agar and reduced nitrate. In litmus milk a slight acid reaction was followed by beginning alkaline in some cases on the second day, becoming distinctly alkaline in all cases on the third day. Considerable deep reduction of the litmus was characteristic of most strains.

All the agglutinative strains fermented glucose, levulose, galactose, *d*-mannose, maltose, *l*-arabinose, *l*-xylose, trehalose, rhamnose, *d*-mannitol, dulcitol, sorbitol and adonitol with acid, coagulation and gas. All gave slow fermentation in dextrin and glycerol. Gas may have been formed, but as a result of the late coagulation of the medium, it was not observed. (It was interesting to note that these strains all differed uniformly from the rapid fermentation with gas in the latter two mediums inoculated with a control strain of *B. enteritidis.*)

None of the ten strains fermented lactose, saccharose, raffinose, *d*-lyxose, melezitose, salicin, inulin, starch, glycogen, erythritol, perseitol, or inositol. (The control strain of *B. schottmuelleri* fermented inositol with acid, gas and coagulation, while the control strain of *B. enteritidis* did not ferment it at all.)

A remarkable uniformity was observed in all reactions except in dextrin, dulcitol, adonitol and glycerol, in which delayed and slight fermentations were determined with considerable difficulty. Thus all ten strains which agglutinated with the type *B. enteritidis* antiserum and gave the same cultural reactions would appear to be strains of the same organism. However, certain variations, scarcely describable, but uniform to the ten cultures, suggested a slight difference from the control strain of *B. enteritidis* (Chicago University E 51). The loose, soft agglutination was also of an entirely different character from the granular, flaky agglutination of the homologous control strain.

B. Ten Nonagglutinating Strains: All ten strains were gram-negative bacilli, slightly thicker and more elliptic than typical paratyphoid bacilli. All rendered litmus milk acid for thirty days, and all formed indol. None blackened lead acetate agar or liquefied gelatin.

From the reactions obtained in the twenty-seven carbohydrate mediums, seven strains resembled closely the nonliquefying *Proteus asiaticus* type, while three strains checked closely with the *Proteus valeriae* (Boycott), as described in Bergey's Manual.

COMMENT

In order to interpret properly the significance of this bacteriologic study, it is necessary to review the information brought out in the early epidemiologic study as having a direct bearing on the source and mode of transmission of the infective agent.

During the period just preceding, flies in the kitchen and dining room had been very annoying. Red ants were an increasing problem for months. Rats and mice were numerous in and about the building. Traps and various poisons for rats were used in the kitchen and storerooms, and it was stated that two dead and mummified rats were taken from behind the kitchen range not long before the outbreak.

On the first visit to the kitchen it was stated that a new rat "poison" had been recommended and used according to directions. The name and directions for preparation at once suggested that this was not a "poison" but one of the several commercial "rat viruses." Further questioning revealed the fact that this virus had been mixed with bread in an old kettle and put in paper bags about the kitchen, storeroom and serving room, and outside the building, October 4. October 24, the kettle in which the virus was mixed was observed on a shelf in a small areaway between the kitchen and the cold-storage room. When it was removed from the shelf, a half-dozen flies flew out of the kettle, where they had been feeding on the bread crumbs adhering to the vessel. A bag of the virus bait was found tied to the leg of the water cooler in the serving room adjacent to the dining room. This bag was taken to the laboratory, where it was kept in a refrigerator until November 1, when some of the bread was softened in sterile water and plated on lactose-litmus agar. On the following day an abundant and practically pure culture of typical paratyphoid bacillus colonies was observed. Three colonies were picked for stock cultures (RVB 1, 2, 3).

November 3, a bottle of the same commercial brand of rat virus was obtained directly from the sales headquarters. This was plated at once, and on the following day typical paratyphoid bacillus colonies were found in pure culture. Three colonies were picked for stock cultures (RV 1, 2, 3).

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[1] J. Infect. Dis. 33:6 (July) 1923.

The three RVB and the three RV strains all agglutinated to the full titer of the *B. enteritidis* antiserum, but gave a soft, flaky agglutination sharply contrasting with the granular agglutination of the control strain (Chicago E 51). In this respect they behaved identically with the fourteen strains isolated from the students.

The cultural reactions of RVB 1 and RV 1 were identical in all essential respects, including delayed fermentations, with those of the ten agglutinative student strains.

The type *B. enteritidis* antiserum was absorbed by agar growths of RV 1 (from the commercial rat virus package) and with the strain 23-1 (from the rectal swab of an acute food poisoning case). Three absorptions were necessary completely to remove all agglutinins for the absorbing strains, after which each absorbed serum still agglutinated the *B. enteritidis* type strain (Chicago E 51) completely at a dilution of 1:600, strongly at 1:1,200, weakly at 1:2,400, but not at 1:4,800. The absorbed antiserums were tested against four other agglutinative student strains, none of which agglutinated.

Antiserums against strains RV 1 and 23-1 were prepared by inoculating rabbits with heat-killed suspensions. Progress was delayed by the death of three animals, the suspensions being apparently highly toxic. A titer of 1:5,120 was finally obtained against RV 1. The 23-1 rabbit attained a titer of 1:2,560 and died after a test bleeding. Both serums agglutinated two strains of *B. enteritidis* (Chicago E 51 and E 52) to the full serum titer.

The RV 1 and 23-1 antiserums were absorbed simultaneously with live cultures of RV 1, 23-1, E 51 and E 52. Two absorptions were required to remove the agglutinins for the respective absorbing strains. After the second absorption, the absorbed antiserums failed to agglutinate either RV 1 or 23-1.

It appears that, while the strains RV 1 and 23-1 did not completely remove agglutinins from a *B. enteritidis* antiserum, cultures of *B. enteritidis* were capable of completely absorbing agglutinins from the rat virus and 23-1 antiserums.

However, the fermentation reactions and other reactions cited above, together with the failure of the rat virus to absorb completely *B. enteritidis* agglutinins, indicates the existence of specific strain distinction of two organisms very closely related. The student strains checked in every respect with the behavior of the rat virus, and it is believed that the evidence warrants the view that the cultures isolated from fourteen students are strains of the rat virus, not *B. enteritidis*.

From this investigation it appears that the only reasonable explanation of the outbreak lies in the assumption that in some unproved manner the rat virus gained access to some food and was the probable cause of the disturbance for the following reasons:

1. A strain identical in all cultural and agglutinative respects with the rat virus was isolated from fourteen of thirty-five affected students examined from four to six days after the onset of the outbreak.
2. This organism was not isolated from any of the twelve persons eating at the hall who were not made ill.
3. This culture differed from *B. enteritidis* in minor variations on cultural tests, gave a different type of agglutination, and failed to remove completely the agglutinins from a type *B. enteritidis* antiserum.
4. A commercial rat virus was distributed about the kitchen, serving room and storerooms, October 4, just sixteen days before the outbreak. A bag of this rat virus bait obtained from the serving room and tested, November 1, showed the presence of many viable bacteria identical with the subsequently isolated rat virus, and with the fourteen agglutinative strains isolated by rectal swab from acute cases.
5. This bait lay on the floor, which was mopped daily by one of the kitchen assistants (M. C., who first washes dishes; secondly, mops the floor with a string mop requiring hand wringing, and, thirdly, goes directly to the preparation of salads for lunch).
6. The kettle in which the virus bait was prepared stood open in a room adjacent to the kitchen for twenty days without cleansing, and when removed from the shelf, a number of flies were found feeding in it.
7. Many flies and red ants were present in all parts of the kitchen and dining room during the period preceding and following the outbreak.
8. Examination of all members of the kitchen staff and waiters resulted in the isolation of the rat virus type from only one person (M. C.), a convalescent from an acute case. Whether or not she was a carrier before the epidemic could not then be determined.
9. A study of lists of foods eaten by 193 girls tends to eliminate from suspicion all except milk, or milk and cream.
10. While the groups were too small to serve as absolute proof, the data indicate that those who drank milk at noon Monday, October 20, had a higher attack rate than that of the entire group, while those who never drink milk had a significantly low attack rate.

SUMMARY

The epidemiologic evidence, confirmed by bacteriologic and serologic findings, indicates that the outbreak of 123 cases of acute gastro-enteritis among the girls eating at the women's hall, and of twelve cases among the kitchen personnel, was due to contamination of some food with a commercial rat virus, which was distributed just sixteen days previous to the outbreak. Paratyphoid bacilli of the same type were alive in the original bait on the serving room floor twelve days after the outbreak. Flies and red ants were abundant and had access to the baits as well as to the kettle in which the bait was prepared. In addition, at least three persons mopped the floors daily with hand-wrung mops, which undoubtedly had contact with the baits, and from this duty went directly to the preparation of foods.

The epidemiologic evidence indicated that milk, or milk and cream, was the probable vehicle of the infection. If milk was responsible, the contamination evidently occurred subsequent to delivery from the dairy. The isolation of a recognizable organism from fourteen affected students, and the identity of these strains, in all respects tested, with organisms isolated from the rat bait and with the rat virus from the commercial package, serves to support and corroborate the other evidence.

Investigating Delinquency.—If we want to understand delinquency and other forms of abnormal conduct, much of our time must be spent, not in the laboratory that deals with death and disease, but in the consulting room, where there is an investigation into life and the mainsprings of action.—Potts, W. A.: *J. Ment. Sc.* **71**:683 (Oct.) 1925.

THE CYTOLOGY OF THE DIARRHEAL STOOL*

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In a previous paper,[1] I offered a clinical study of the stool as evidence that summer diarrhea is more than the direct effect of heat on the organism. The conclusion was that most cases of summer diarrhea are characterized by an enormous discharge of cells in the stools which can rationally be explained only by an inflammatory reaction due to a local infection. The examination of the fresh diarrheal stool for cells has been a routine in my office for several years, and more than a thousand such examinations have been made.

My first efforts were directed almost entirely to a comparison of the number of cells and the clinical symptoms. In general, a liquid stool that showed more than ten cells to the field (diluted two-thirds with water), under the ordinary low power of a microscope, was regarded as strong evidence of a local infectious process. If, as is the case in most severe enteritides, hundreds of cells were present, the case was beyond doubt one of an infectious diarrhea.

I watched the discharge of these cells from day to day, and directed my therapeutic endeavors by the number of cells. Infants were seen, with fever and digestive disturbances, who showed no cells on the first day but a great increase on the second and third days; this was regarded as a sign that the infection was being thrown off. As the cells diminished, the food was increased; when the cells disappeared, the child was placed on a normal diet.

This examination, supplementing the general clinical symptoms with a laboratory finding, seemed to give a more comprehensive grasp of the situation.

I soon learned to recognize not only a difference in numbers but also a difference in the kind of cells. It was easy to recognize the large mononuclear cell, which I originally called a lymphoid cell, but which recently has been definitely shown to be identical with the endothelial leukocytes—called also giant cell, macrophage and clasmatocyte. I learned to associate this cell with an infectious enteritis, consequently adding to my records not only the number of cells found but also the presence or absence of these giant cells. My own conclusion that these large cells always indicate a discharge of the cell contents of a solitary follicle seems erroneous, since the clasmatocytes have been found in large numbers among the cells of the mucous membrane in bacilliary dysentery. I noted that most of the cells of the infectious enteritis were polymorphonuclear cells.

Other pictures were found, such as shreds of mucus crowded with degenerated epithelial cells—fluid stools that had numerous small cells resembling lymphocytes. The clinical features of these cases were different from those showing clasmatocytes and pus cells.

I tried many times to study stained specimens, but these cells do not stain well. Only the nuclei and sometimes a part of the cell are visible, but by continued practice one becomes more skilful in interpreting the specimen. I now use Löffler's methylene blue and a weak solution of eosin for staining the cells.

The use of Delafield's hematoxylin as a nuclear stain is still better, but it takes more time. Wright's stain may also be used, but it does not give such a clear picture. There is great difficulty in fixing the smear on a slide, probably on account of the small amount of albuminous substance present. The varying acidity of the stool causes a great variation in the tint of the stained cells and makes the interpretation more uncertain.

In spite of these difficulties, I succeeded in getting fairly satisfactory specimens in many instances this summer, and my work confirms in general that of Willmore and Shearman, Haughwout and others.[2] These studies on the cytology of the dysenteric stool have been made mostly in India and the Philippines. To Manson-Bahr, working in the Fiji Islands, is given the credit of first pointing out the diagnostic significance of the exudate in bacillary dysentery. The first comprehensive study of the subject was given by Willmore and Shearman.[3] Subsequent studies by several authors enlarged the field of knowledge. Several studies by Haughwout, of great importance, were printed in Philippine publications and not seen by American readers.

My own attention to these studies was drawn by an article by Haughwout [4] on the early diagnosis of dysentery. These publications lay stress on the differential diagnosis of amebic dysentery, balantidiosis and bacillary dysentery. As most of our enteritides are due to the Flexner dysentery bacillus and, I believe, to the virulent colon bacilli, the characters of the bacillary exudate as summarized by Willmore and Shearman are instructive. Somewhat abridged, they are as follows:

1. Abundant polymorphonuclear exudate.
2. Evidence of toxic necrosis in the cells as evinced by the presence of the "ghost cell."
3. Evidence of intense inflammatory reaction.

To these, Haughwout adds the presence of clasmatocytes in large numbers. I have also found shreds of fibrin in the stools of these patients. No doubt the original lesions produced by the dysentery bacillus are secondarily infected by other micro-organisms, and there is a continuous suppurative process in the intestine extending over a long period. I have found these chronic suppurative processes going on in many cases of marasmus, chronic intestinal indigestion and even celiac disease.

After discussing the cells of the amebic dysentery, Haughwout draws attention to a cellular exudate of a different character, the importance of which to the pediatrician seems very great. I had already observed in my studies that the liquid stools of infants suffering from mucous colitis, exudative diathesis and enterospasm were of a different character. The stools in these cases showed a large amount of transparent mucus, the cells varying in number; usually only five or six were floating in the field, in comparison with many hundreds incorporated in the glairy mucus. But these cells were small, and no macrophages were present. Moreover, the evidence of toxic necrosis was absent. I call this the cell picture of mucous colitis.

Haughwout refers to this picture and cites an intestinal allergy as the cause. He says: "In the early stages, the watery bowel discharges are likely to contain masses of mucus, and if these are examined microscopically, they will be found laden with cells, the picture strongly resembling that of bacillary dysentery. However, macrophages and evidences of toxic necrosis will not be present. Polymorphonuclear leukocytes will be very scarce. The exudate will be seen to be composed of mononuclear cells and of polymorphonuclear eosinophils. These two types of cells often will be found in separate portions of the smear."

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* Read before the St. Louis Pediatric Society, Oct. 16, 1925.

[1] Zahorsky, John: Summer Diarrhea, Am. J. Dis. Child. 15:413 (June) 1918.

[2] A good summary of these studies is given by Haughwout, F. G., and Callender, G. E.: Internat. Clinics, Series 35, 2:104, 1925.

[3] Willmore, J. G., and Shearman, C. H.: Diagnosis of Dysenterics, Lancet 2:200 (Aug. 17) 1918.

[4] Haughwout, F. G.: Microscopic Diagnosis of Dysenteries at Their Onset, J. A. M. A. 83:1156 (Oct. 11) 1924.

In several other papers I have published the results of my own methods in the clinical use of examining the stool for the cellular exudate. With the additional data obtainable by staining some specimens, I am convinced that this method of diagnosis will find other adherents. The practitioner wants to know what is going on in the intestine, and the study of the number and variety of cells helps very much. When this is supplemented by a bacteriologic examination, the diagnosis is complete.

It is exceedingly doubtful whether the present fashion of disregarding the stool and what it may teach will lead very far. The general symptoms must be studied, but the cell contents of the stool will show whether the baby is suffering from a localized folliculitis, a widespread enteritis, a colitis or a proctitis, and the therapy can be directed accordingly. Moreover, it is an advantage to the physician to know whether the severe dyspeptic symptoms of the baby are the expression of an allergic enteritis or an infectious enteritis. The treatment is different.

It will take a great deal of study to clear up the cytology of the diarrheal stool, but a beginning has been made.

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ANAPHYLACTIC REACTIONS FOLLOWING ADMINISTRATION OF SERUMS

TO CHILDREN PREVIOUSLY IMMUNIZED AGAINST DIPHTHERIA

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The administration of diphtheria toxin-antitoxin to render children immune to diphtheria is unquestionably a valuable procedure, although having the distinct disadvantage of sensitizing these individuals to horse serum. Subsequent administrations of serums as therapeutic and prophylactic measures undoubtedly are accompanied with the danger of anaphylactic reactions. As a result of the widespread employment of toxin-antitoxin preparations for active immunization of children against diphtheria, clinicians undoubtedly will encounter an increased frequency of the incidence of anaphylactic reaction following subsequent administration of serums to these sensitized patients. I have recently had seven such instances, all of which occurred in children who previously had been immunized against diphtheria.

The first instance occurred following the administration of a prophylactic injection of antitetanic serum to a child who had received immunizing doses of diphtheria toxin-antitoxin one year previously. Promptly following the injection of this serum, the breathing became rapid, and a diffuse erythema of the skin developed, of severe intensity. Ten minims (0.6 c.c.) of epinephrin was administered, which gave prompt relief. One week later, a generalized urticaria accompanied by intense itching and enormous wheals developed. Marked angioneurotic edema appeared, involving the tongue, face, hands and feet. Four subsequent similar attacks of equal severity occurred at intervals of from three to four days.

Five additional cases of anaphylactic reactions were seen following the administration of prophylactic doses of scarlatinal antistreptococcic serum to children exposed to scarlet fever. All the children had been immunized against diphtheria from eight to eleven months previously. In each instance the cutaneous manifestations, such as urticaria and angioneurotic edema, were of such severity as to be alarming. In the most severe of the five cases the temperature rose to 104 F. on the second day, and the child had severe vomiting attacks every half hour for twelve hours, which promptly subsided after a subcutaneous injection of 20 minims (1.25 c.c.) of epinephrin. One day later, vomiting recurred, which again subsided on the administration of epinephrin. At this time an edema appeared, involving the left arm, of such intensity as partially to immobilize the elbow. Six subsequent exacerbations of anaphylactic manifestations of varying severity occurred in the patient at intervals of from one to three days. In this instance, a desensitizing dose of a few minims of the scarlatinal antistreptococcic serum had been injected subcutaneously two hours before the administration of the entire dosage (10 c.c.), but failed to prevent the serum reaction.

The seventh anaphylactic reaction occurred following the injection of diphtheria antitoxin. This child, three months previously, had been immunized against diphtheria, but apparently had not developed an immunity to the disease. The reaction in this instance was much milder than in the other six cases.

DANGER IN USE OF ANTITOXIN CONTAINING HORSE SERUM

Although no deaths occurred among these seven patients, nevertheless the reactions experienced probably should serve as a warning to use care in the administration of serums, derived from horses, to children who have been previously sensitized by injections of diphtheria toxin-antitoxin. A complete avoidance of serum sensitization undoubtedly is highly desirable. As a result of recent studies[1] at the University of Minnesota, a method is being perfected by means of which children may be immunized against diphtheria without the employment of serums. The perfection and standardization of this method unquestionably will prove a distinct and important contribution to medical science.

Attention is called to danger of the occurrence of anaphylactic reactions following the administration of various antitoxins containing horse serum to children who have been sensitized to this serum through diphtheria immunization. Active immunization of the child population against diphtheria is so important, however, that the development of a method by which an immunity to this disease may be acquired without serum sensitization is highly desirable.

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[1] Larson et al.: Antidiphtheritic Immunization Using Sodium Ricinoleate as a Detoxifying Agent, Proc. Soc. Exper. Biol. & Med. **22**: 552-553, 1925.

Clinical Notes, Suggestions and New Instruments

A NEW METHOD OF MOLDING WAX BOUGIE BULBS

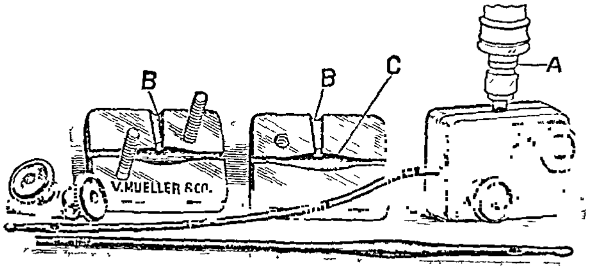
B. C. Corbus, M.D., Chicago

To Guy L. Hunner belongs the credit of establishing ureteral stricture as a clinical entity. After many years of persistent writing and discussion on Hunner's part, American urologists have come to believe that stricture of the ureter is a fairly common lesion, and year by year additional case reports have substantiated Hunner's ideas.

Hunner's method of dilating the ureter is by means of wax bulbs molded by hand, and, before the advent of the solid bulb, was the best method available. As all solid bulbs are imported and consequently expensive, I conceived the idea of molding wax bulbs by machine made molds. If one has a set of dies, these bulbs, after a little practice, can be quickly and cheaply made.

When the wax bulb is used for ureteral dilation, the McCarthy cysto-urethroscope is preferable, as it has none of the disadvantages of the female air cystoscope of Kelly, the original instrument used by Hunner in dilating ureteral strictures. As the ureter is a very delicate structure, any manipulation that is not carried out with the most extreme care will be accompanied by trauma, and more harm than good will result.

So, in order to facilitate careful and regular dilatation, it is absolutely essential to have a dilating bulb that is smooth and symmetrical, and great care must be taken to dilate slowly, always repeating the last size, introducing and increasing only one size at a time. Intervals of from ten to fifteen days should elapse between treatments.



Outfit for molding wax bougie bulbs: *A*, syringe containing molten wax; *B*, channel through which wax passes; *C*, cavity for molding the bougie. Below is the catheter with wax bougie.

INSTRUCTIONS FOR USE

Each size bougie has its own mold, the size being marked in the French scale on the top of the mold. On one end are the letters O-O, for the purpose of proper assembly.

In making bougies, the two knurled thumb screws are removed and the mold separated. Oil, on a piece of gauze or cotton, is applied to both halves of the mold. It is necessary to see that all parts are covered with the oil, but too much must not be used, as oil should not retouch the catheter or bougie.

A No. 6 catheter or bougie is placed in one half of the mold; the remaining half is replaced and locked tightly with the thumb screws. The mold is placed on edge with the hole in the side upward. This hole is called the "gate" through which the wax is applied.

A metal syringe and proper wax accompany the outfit.

The end of the syringe is unscrewed and into it is dropped about 1½ inches of the wax. The end is replaced and the distal end of the syringe is held over a gas or alcohol flame, while the syringe plunger is gently pressed. When the wax melts to a liquid, a few drops are forced out in order to expel the air. Then molten wax is applied through the gate of the mold, moderate pressure being used. The syringe is removed and the wax is allowed to cool. This may be hastened by holding under running water. When the bougie is removed, the mold is separated and gently lifted out. Should the wax have a tendency to adhere, the "stem" or part that goes through the gate of the mold should be loosened. This stem is cut off with a sharp knife when the bougie is released. Any rough edges can be smoothed with the fingers.

After a little practice it will be found that the bougies are smooth and uniform. They will stand much handling and are semiflexible. Bougies may be removed with hot water. The bulbs may be attached to either a plain or a roentgen-ray bougie or catheter.

30 North Michigan Avenue.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 37)

I. DUSTING POWDERS

Very fine powders intended for application to the skin are known as dusting powders. They must be free from grittiness, so as to be devoid of mechanical irritating qualities.

A. SIMPLE DUSTING POWDERS

Simple dusting powders, by clinging to the surface, form a covering that to a certain extent protects the skin from contact with air and friction of clothing, and thus lessens itching and burning sensations. In addition to this, some of these powders, which might be called hydrophil because they absorb water, have a capacity for taking up fluid from the surface, thereby exerting a drying action. As moisture is one of the essential conditions for multiplication of bacteria, these powders, by their drying action, tend to inhibit the growth of micro-organisms; hence they have some antiseptic value. This drying action also causes a certain degree of condensation of the tissue, an effect that might be designated as a slight astringency. Sollmann[4] arranges dusting powders in order of their relative water absorbing capacities as follows:

Powder Tested	Weight of Water Held by 3 Gm. of Powder	Retained Water as Per Cent of Powder
Starch (corn)	2.39	80
Kaolin	2 19	73
Fullers' earth	2.09	70
Precipitated calcium carbonate	1.94	65
Talcum	1.84	61
Prepared chalk	1.59	53

From this it is seen that starch and kaolin are more effective water absorbents than chalk or talcum. Nevertheless starch, unless protected by antiseptics, must not be employed on discharging surfaces, as in intertrigo, because of its tendency to decomposition. For such areas, kaolin or fullers' earth would be preferable, though it is well to add even to them a mild antiseptic, such as boric acid (from 2 to 4 per cent) to antagonize decomposition of the absorbed discharge.

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* This is the second of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

[4] Sollmann, Torald: Water Absorbing Capacity of Dusting Powders, J. A. M. A. **72**:935 (March 29) 1919.

Some of these powders, especially fullers' earth, are endowed with adsorbent qualities; i. e., the power of attracting and holding molecules from solution. This may result in a lessening of irritation when irritant substances are thus adsorbed.

These powders must not be used on extensive, profusely secreting, raw surfaces, because of their tendency to cake, or to form a scab by admixture with and drying of wound secretions. This caking favors retention of discharge and by its hardness produces irritation. If, however, the lesions are discrete, even though they are distributed all over the body, dusting powders may still be the best application. In pemphigus vulgaris, *for instance, the patient*, whose body is almost completely covered with blisters and weeping erosions, is often best wrapped in a sheet on which a large amount (from 1 to 2 Kg.) of talcum has previously been dusted.

Talcum, a fine, white, slippery powder, is perhaps the most commonly used of the dusting powders. It is also by reason of its chemical indifference a favorite diluent for antiseptic and astringent powders.

Of an entirely different nature is lycopodium (spores of the club-moss), a very mobile yellow powder that contains so large a proportion of fat that it sheds water. Another dusting powder that sheds water is zinc stearate,[5] which has the advantage over lycopodium in being white instead of yellow. These lipophil powders are especially suitable for protecting a fatty surface, such as the normal skin, against irritation from watery discharges; for example, the infant's skin against irritation from urine. Once excoriation has occurred and a weeping surface is present, a hydrophil dusting powder such as fullers' earth and talcum is better than the lipophil powders.

For applications to skin surfaces exposed to view, dusting powders as well as other skin remedies might advantageously be given a flesh color. This can be secured by employing a buff powder, such as calamine. If a closer imitation is desired, a small proportion, say 0.1 per cent, of eosin might be added. A still better approximation to human skin color would require more study than physicians are likely to give to this matter. Difference in skin tints forces manufacturers to place on the market a number of differently colored face powders; the perfuming of such powders, so generously practiced by these manufacturers, is another item of elegance usually neglected by the medical prescriber.

Writing prescriptions for simple dusting powders is generally quite unnecessary. In the interest of economy, we do not, as a rule, write formal prescriptions for ordinary and quite harmless articles of commerce. True, this may lead to a loss in the psychic potency of the remedy, for there is mystery to the patient in the unknown or not understood composition. On the other hand, the patient might lose some of his respect for prescription and prescriber should he discover that his prescription called for mere talcum.

B. MEDICATED DUSTING POWDERS

For additional action, these simple dusting powders may be medicated by the incorporation with them of antiseptic, astringent, antipruritic or anodyne agents; or else a slightly soluble powder of desired special action may be used.

Among the antiseptic dusting powders, boric acid is perhaps the most important. It is so mild that it may be used undiluted. It may also be added to some simple dusting powder in almost any desired proportion.

An antiseptic much more powerful than boric acid is salicylic acid, which is employed for the purpose of medicating dusting powders used, for instance, in the *treatment of bromidrosis, or excessive and ill smelling* perspiration. From 3 to 10 per cent of salicylic acid may be added to talcum or any other hydrophil dusting powder for use in such a condition.

Iodoform not only is an antiseptic dusting powder but also has analgesic potency, by reason of which it is sometimes superior to some of its succedanea, such as thymol iodid. The latter is often preferred, however, because it is devoid of unpleasant odor.

An antiseptic and astringent dusting powder is obtained by mixing silver nitrate with kaolin in the proportion of 1 : 5,000, as advocated by H. Stuart. "Kaolin," he says, "is to a surgeon what a blotter is to a writer." As it is nonantiseptic it should be sterilized before using, or, better still, armed with a germicide, so that the micro-organisms imprisoned by it may be executed. Stuart believes that silver nitrate is best for this purpose and that a strength of 1 : 5,000 not only takes care of infection but also fosters healing and has analgesic effect. This powder administered by mouth may afford relief in gastric disorders; it is so harmless that it would require 50 gm. of the powder before an average dose of 0.01 gm. of silver nitrate is given. He advises shopkeepers to keep on hand a large salt cellar full of this mixture, so that it may be applied freely to fresh wounds instead of iodin; for while iodin slows healing, kaolin hastens it.

For purely astringent action, alum, 10 per cent, is perhaps as good as any other agent for incorporation in a dusting powder such as kaolin.

For antipruritic action, menthol, 2 per cent, may be added to talcum and advantagously used, after sponging the affected part with a hot solution of sodium bicarbonate. The excess of solution is mopped off, so as to leave the skin somewhat moist; this causes the powder to adhere better and increases its cooling action by evaporation of moisture.

For analgesic action on painful, raw surfaces, 5, 10 or 20 per cent of benzocaine, also known as anesthesin, added to boric acid is perhaps the most eligible, should a dusting powder seem indicated.

FUMIGATION

Fumigation, such as that of calomel for syphilitic sores, is essentially nothing more or less than the application of a powder to the skin. The naked patient is placed on a cane-seated chair. He is covered with a blanket which is tightly fastened around his neck. The calomel vapor is generated by a vaporizing apparatus placed beneath the chair. It is well to precede the medicinal vapor by steam until the patient is perspiring.

II. NONABSORBENT FILMS

Some films, such as the paraffin films, are used as artificial substitutes for the natural protector of the body, the epidermis, whenever the latter is deficient; some also, such as the medicated collodions for prolonged application of medicament, and some, the gelatin films and plasters, for support, immobilization or prolonged medication. An important difference obtains between the action and use of these nonabsorbent films and absorbent dressings. The latter are used for infected and discharging surfaces, to keep the area dry and thus less suitable for the growth of micro-organisms. Nonabsorbent films must be employed only on clean and relatively dry surfaces.

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[5] When used in the nursery, zinc stearate or talcum containers should have a self-closing sprinkling top, as otherwise babes, with their instinctive tendency to put things into their mouths, are liable to aspirate powder into their lungs in sufficient quantity to produce serious injury.

There is nothing more natural than to supply a deficiency of the natural protective film—the epidermis—by some artificial film; and artificial films, most especially in the form of fat, have been employed for this purpose from time immemorial. Whether we use carron oil, castor oil, petrolatum or paraffin, the mode of action is essentially the same: we supply a pliable film that is nonabsorbent and inhibits drying, which produces distress in fresh raw surfaces and is detrimental to healing. The chief disadvantage of most of these films is that they are liable to permit underneath them accumulation of secretion, which, serving as a culture medium, may cause sepsis. This is the reason why nonabsorbent films should not be used on infected surfaces. Such need moist dressings, the technic of which will be described later. On the other hand, as soon as the infection has cleared up, these films are superior to moist dressings, because the latter drain away not only infective but also reparative material.

The routine addition of antiseptics to films is erroneous for several reasons, chief among which is the fact that all agents inimical to bacterial growth are also more or less detrimental to the growth of cells. Hence, they should not be used on a delicate raw surface, when there is no infection; when there is infection, we have in moist dressings a much more efficient treatment.

The various lipophil films, used as dressings for burns, differ chiefly in their melting point. It is not difficult to understand that, when we employ a fatty body to act as a substitute for the lost epidermis, the first requisite for success is that it must stay on the surface. This is not the case with those fatty substances that are liquid at body temperature, such as castor oil or petrolatum. They are sucked up by the absorbent gauze with which they are usually covered, and the dressing sticks and is hard to remove. To be thoroughly satisfactory, the melting point of the application must be above the temperature of the body surface. This can be secured by mixing petrolatum with paraffin, so as to obtain a cerate-like salve, or by painting on melted paraffin.

PARAFFIN FILMS

The paraffin dressing of burns, about which so much was written during the World War, is on the whole a very simple affair. Here, as has so often been the case with other remedies, the progress has been from the complex to the simple. Introduced under the name "Ambrine" as a secret preparation by Barthe de Sandfort, with what seemed exorbitant claims, it was found that the claims were essentially true, but the composition unnecessarily complex. Thus, P. N. Leech[6] showed it to be composed of 97 per cent of paraffin, the rest being a little fatty oil, an asphalt-like body, coloring matter, etc., all of which have since been found to be unnecessary and some even undesirable. Indeed, Leech finds that a more satisfactory product can be obtained by using paraffin of a melting point at or below 50 C., which is pliable at 28 and ductile at 31. Such paraffins are now readily obtainable under the name of surgical paraffin, which differs from the official paraffin (melting point from 50 to 57 C.) in having a lower melting point. Both Leech and Sollmann[7] have found that the addition of even traces of asphalt to paraffin greatly lowers its surface tension, so that when the melted paraffin is poured on warm water it forms a thin, even film, whereas simple paraffin tends to collect in thick drops. Asphalt also makes the paraffin a little more adherent. For cosmetic reasons, a flesh tint may be given by the addition of a trace of scarlet red or sudan. A little of an aromatic oil, such as oil of eucalyptus, may be added as perfume to cover disagreeable odors that may develop. These additions, however, are not essential for obtaining good results.

Medication with antiseptics or stimulants is useless, as the paraffin protects the chemical against access of solvent. Sollmann[7] immersed in water a film of paraffin containing resorcin. After five days the water contained no trace of resorcin. Paraffin containing 1 per cent phenol (carbolic acid) yielded not more than a faint trace to water.

The claims made for the paraffin dressing were that healing occurred much more rapidly, that there was much less scarring, and that skin grafting was not nearly as often required as after other dressings. Of course, the dressing cannot create new epithelium, and skin grafting becomes necessary when the whole of the epidermis has been destroyed over an area at all extensive. The reasons for the remarkable success of the dressing are partly positive, partly negative. The dressing is bland and nonirritating, and the healing occurs with very little waste of material. The living cells are not likely to be pulled off or otherwise injured, as occurs with adherent dressings; nor are they killed by drying or antiseptics. Among the positive advantages, it must be noted that the paraffin excludes the air, maintains a constant temperature and forms a protective covering. It serves as a scaffolding or support to the new epithelium and acts as a cast, immobilizing the surface. A secretion soon forms which is a culture medium for the proliferating cells, making possibly two cells grow where only one would grow without it. The secretion forming under it within twenty-four hours makes the dressing easy to remove without pain, bleeding or destruction of the newly regenerated epithelium. Another reason for the reputed lessening of scarring may be the preservation of remnants of skin glands, from which epithelial islands may spring and which are destroyed by less physiologic conditions. There must, of course, be no infection; otherwise the fluid accumulating under the dressing furnishes a culture medium for the micro-organisms, and their poisons would do more harm than the dressing would do good.

The chief disadvantage of the paraffin dressing lies in its rather complicated technic. The paraffin must be melted and applied to the surface at just the right temperature. If too hot, it causes pain; if permitted to become too cool, it cannot be applied. The technic of the dressing has, however, been so much improved and simplified that there is no reason why it should not now find general employment.

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[6] Leech, P. N.: "Ambrine" and Paraffin Films, J. A. M. A. 68: 1497 (May 19) 1917.

[7] Sollmann, Torald: Development in the Paraffin Treatment of Burns and Other Open Wounds, J. A. M. A. 68: 1799 (June 16) 1917.

The paraffin, shaved or broken into small pieces, is put into a perfectly dry sterilized receptacle, which is well covered to prevent water from splashing into it, and is placed in a larger vessel partly filled with water that is kept boiling until all the paraffin is melted. Should water get into the melted paraffin, it may cause severe pain when the dressing is applied. The difficulty of keeping the paraffin just at the melting point for any length of time may be overcome by using sodium acetate instead of water in the outer vessel, as suggested by Sollmann.[8] This salt has the curious property of melting and congealing at just about the temperature needed for the application of the paraffin, and, while passing from the liquid to the solid state, of retaining this constant temperature for a long time, as long as three hours. Before applying it, the temperature of the melted paraffin is taken or else tested against applying it too hot by dropping a little of it on the back of one's hand.

The burned area is carefully cleansed by aseptic or antiseptic irrigation and removal of loose dead tissue. One should then dry it by laying a piece of sterile gauze over it, gently touching and blotting the gauze by wads of dry gauze or cotton. The surface should never be wiped, and the greatest care should be exercised to avoid bleeding or infection. The use of a hot air douche to expedite drying is convenient but not essential.

To minimize the distress caused from the application of the first coat of melted paraffin to the sensitive raw surface, Sollmann's suggestion first to paint it with liquid petrolatum is worth remembering. Over this a thin film of melted paraffin is laid by a series of gentle pats, rather than by painting it on. Special atomizers, with a hot water jacket for maintaining the proper temperature, have been constructed for the purpose of applying the first coat of paraffin with the least distress. They are, however, liable to be troublesome, and some surgeons well experienced in this method have abandoned the spray. The hot paraffin should be carried half an inch or more over the healthy skin, to which it adheres, completely sealing the wound. Because the skin is more sensitive than a raw surface, patients may complain of pain when the application to the healthy skin is made. However, if the temperature is at or near the melting point of paraffin, there is no danger of a burn. After the first film has been laid on, a second fairly thick layer may be applied by painting it on.

The dressing may now be finished by covering it with a gauze bandage, or else a piece of gauze may be placed over the paraffin and a muslin roller bandage applied. This method is probably superior to the use of thin layers of absorbent cotton placed over the paraffin film and covered with a thick layer of paraffin. In neither case is cotton or gauze applied directly to the raw surface.

At first the dressing needs to be changed once every twenty-four hours; later, it may be left in place for forty-eight hours or longer. In removing the dressing it is best to slit it through with the scissors, being careful of course not to wound the raw surface. Owing to the accumulation of fluid underneath it, the film may then be rolled back without the least pain or danger to the injured part. A fresh dressing is then reapplied in the manner described before. When pus is too profuse or when absorption symptoms occur (fever, redness and swelling), the paraffin treatment is discontinued for a day or two and antiseptic compress treatment applied. In extensive burns, early grafting (usually in about three weeks) is advisable.

The paraffin film may also be useful as an antipruritic. Kissmeyer[9] called attention to the use of paraffin films in dermatology not only for the healing of leg ulcer, but also and most especially in eczema, neurodermatitis, prurigo and roentgen-ray burns. While it did not always secure healing, it never failed to lessen the itching promptly. It has also been recommended in herpes zoster.[10]

COLLODIONS

Collodions are solutions of pyroxylin (soluble gun cotton) in a mixture of ether (3 parts) and alcohol (1 part). When this solution is painted on a surface exposed to the air, the alcohol and ether evaporate, leaving a thin film.

These preparations are intended to furnish a waterproof film, which may be useful to cover small skin defects, provided the surface is sterile and dry. They are irritating, while fluid, on account of the presence of volatile solvent, and simple collodion is unpleasant because it contracts when it dries. There is a flexible collodion (official) made so by the addition of 3 per cent of castor oil and 2 per cent of camphor, which is somewhat better to use than the other kind, unless the contractile effect is desired.

Collodions may also serve for the prolonged application of medicament to the skin. The National Formulary contains a number of examples of medicated collodions, among which may be mentioned the styptic collodion, containing 16 per cent tannic acid, and a corn collodion, under the name compound salicylic collodion, whose action is due to 10 per cent of salicylic acid. The presence in this preparation of 10 per cent of fluidextract of cannabis is irrational, as the fluidextract cannot do any more than merely give a green color to the preparation. Before applying this "corn collodion," one takes a prolonged hot foot bath and scrapes or trims off all the easily removable epidermis. The process is repeated daily until a satisfactory result is secured.

(To be continued)

Medical Treatment of Gastric Ulcer.—I am a great believer in the medical treatment of gastric and duodenal ulcer so long as no hour-glass contraction or pyloric obstruction is present. The danger of failing to recognize that a chronic ulcer is becoming malignant is not great, as the roentgen ray generally settles the question at once. But in the very earliest stages the appearance may still be that of a chronic ulcer. In such cases the immediate result of treatment does not help, as the symptoms disappear as quickly as in an uncomplicated ulcer. The crater of the ulcer also becomes smaller, though it does not disappear completely as it does in nearly all cases of chronic gastric ulcer. But what is of far more importance is that occult blood persists, however long the treatment continues and however well the patient appears to get. If, therefore, at the end of a fortnight's treatment symptoms are still present, or at the end of a month the crater has not either disappeared or become much smaller, or, most important, if occult blood is present in undiminished quantity, an operation should be advised without further delay.—Hurst, A. F.: *Guy's Hosp. Rep.* **75**:403 (Oct.) 1925.

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[8] Sollmann, Torald: Convenient Devices for Melting Paraffin for Burns, J. A. M. A. **68**: 1895 (June 23) 1917.

[9] Kissmeyer, A.: Ugesk. f. Læger, April 7, 1921.

[10] Fox, Howard: Relief of Pain in Herpes Zoster by Paraffin, J. A. M. A. **79**: 1979 (Dec. 9) 1922.

films and plasters, for support, immobilization or prolonged medication. An important difference obtains between the action and use of these nonabsorbent films and absorbent dressings. The latter are used for infected and discharging surfaces, to keep the area dry and thus less suitable for the growth of micro-organisms. Nonabsorbent films must be employed only on clean and relatively dry surfaces.

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The paraffin dressing of burns, about which so much was written during the World War, is on the whole a very simple affair. Here, as has so often been the case with other remedies, the progress has been from the complex to the simple. Introduced under the name "Ambrine" as a secret preparation by Barthe de Sandfort, with what seemed exorbitant claims, it was found that the claims were essentially true, but the composition unnecessarily complex. Thus, P. N. Leech[6] showed it to be composed of 97 per cent of paraffin, the rest being a little fatty oil, an asphalt-like body, coloring matter, etc., all of which have since been found to be unnecessary and some even undesirable. Indeed, Leech finds that a more satisfactory product can be obtained by using paraffin of a melting point at or below 50 C., which is pliable at 28 and ductile at 31. Such paraffins are now readily obtainable under the name of surgical paraffin, which differs from the official paraffin (melting point from 50 to 57 C.) in having a lower melting point. Both Leech and Sollmann[7] have found that the addition of even traces of asphalt to paraffin greatly lowers its surface tension, so that when the melted paraffin is poured on warm water it forms a thin, even film, whereas simple paraffin tends to collect in thick drops. Asphalt also makes the paraffin a little more adherent. For cosmetic reasons, a flesh tint may be given by the addition of a trace of scarlet red or sudan. A little of an aromatic oil, such as oil of eucalyptus, may be added as perfume to cover disagreeable odors that may develop. These additions, however, are not essential for obtaining good results.

Medication with antiseptics or stimulants is useless, as the paraffin protects the chemical against access of solvent. Sollmann[7] immersed in water a film of paraffin containing resorcin. After five days the water contained no trace of resorcin. Paraffin containing 1 per cent phenol (carbolic acid) yielded not more than a faint trace to water.

The claims made for the paraffin dressing were that healing occurred much more rapidly, that there was much less scarring, and that skin grafting was not nearly as often required as after other dressings. Of course, the dressing cannot create new epithelium, and skin grafting becomes necessary when the whole of the epidermis has been destroyed over an area at all extensive. The reasons for the remarkable success of the dressing are partly positive, partly negative. The dressing is bland and nonirritating, and the healing occurs with very little waste of material. The living cells are not likely to be pulled off or otherwise injured, as occurs with adherent dressings; nor are they killed by drying or antiseptics. Among the positive advantages, it must be noted that the paraffin excludes the air, maintains a constant temperature and forms a protective covering. It serves as a scaffolding or support to the new epithelium and acts as a cast, immobilizing the surface. A secretion soon forms which is a culture medium for the proliferating cells, making possibly two cells grow where only one would grow without it. The secretion forming under it within twenty-four hours makes the dressing easy to remove without pain, bleeding or destruction of the newly regenerated epithelium. Another reason for the reputed lessening of scarring may be the preservation of remnants of skin glands, from which epithelial islands may spring and which are destroyed by less physiologic conditions. There must, of course, be no infection; otherwise the fluid accumulating under the dressing furnishes a culture medium for the micro-organisms, and their poisons would do more harm than the dressing would do good.

The chief disadvantage of the paraffin dressing lies in its rather complicated technic. The paraffin must be melted and applied to the surface at just the right temperature. If too hot, it causes pain; if permitted to become too cool, it cannot be applied. The technic of the dressing has, however, been so much improved and simplified that there is no reason why it should not now find general employment.

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[6] Leech, P. N.: "Ambrine" and Paraffin Films, J. A. M. A. 68: 1497 (May 19) 1917.

[7] Sollmann, Torald: Development in the Paraffin Treatment of Burns and Other Open Wounds, J. A. M. A. 68: 1799 (June 16) 1917.

The paraffin, shaved or broken into small pieces, is put into a perfectly dry sterilized receptacle, which is well covered to prevent water from splashing into it, and is placed in a larger vessel partly filled with water that is kept boiling until all the paraffin is melted. Should water get into the melted paraffin, it may cause severe pain when the dressing is applied. The difficulty of keeping the paraffin just at the melting point for any length of time may be overcome by using sodium acetate instead of water in the outer vessel, as suggested by Sollmann.[8] This salt has the curious property of melting and congealing at just about the temperature needed for the application of the paraffin, and, while passing from the liquid to the solid state, of retaining this constant temperature for a long time, as long as three hours. Before applying it, the temperature of the melted paraffin is taken or else tested against applying it too hot by dropping a little of it on the back of one's hand.

The burned area is carefully cleansed by aseptic or antiseptic irrigation and removal of loose dead tissue. One should then dry it by laying a piece of sterile gauze over it, gently touching and blotting the gauze by wads of dry gauze or cotton. The surface should never be wiped, and the greatest care should be exercised to avoid bleeding or infection. The use of a hot air douche to expedite drying is convenient but not essential.

To minimize the distress caused from the application of the first coat of melted paraffin to the sensitive raw surface, Sollmann's suggestion first to paint it with liquid petrolatum is worth remembering. Over this a thin film of melted paraffin is laid by a series of gentle pats, rather than by painting it on. Special atomizers, with a hot water jacket for maintaining the proper temperature, have been constructed for the purpose of applying the first coat of paraffin with the least distress. They are, however, liable to be troublesome, and some surgeons well experienced in this method have abandoned the spray. The hot paraffin should be carried half an inch or more over the healthy skin, to which it adheres, completely sealing the wound. Because the skin is more sensitive than a raw surface, patients may complain of pain when the application to the healthy skin is made. However, if the temperature is at or near the melting point of paraffin, there is no danger of a burn. After the first film has been laid on, a second fairly thick layer may be applied by painting it on.

The dressing may now be finished by covering it with a gauze bandage, or else a piece of gauze may be placed over the paraffin and a muslin roller bandage applied. This method is probably superior to the use of thin layers of absorbent cotton placed over the paraffin film and covered with a thick layer of paraffin. In neither case is cotton or gauze applied directly to the raw surface.

At first the dressing needs to be changed once every twenty-four hours; later, it may be left in place for forty-eight hours or longer. In removing the dressing it is best to slit it through with the scissors, being careful of course not to wound the raw surface. Owing to the accumulation of fluid underneath it, the film may then be rolled back without the least pain or danger to the injured part. A fresh dressing is then reapplied in the manner described before. When pus is too profuse or when absorption symptoms occur (fever, redness and swelling), the paraffin treatment is discontinued for a day or two and antiseptic compress treatment applied. In extensive burns, early grafting (usually in about three weeks) is advisable.

The paraffin film may also be useful as an antipruritic. Kissmeyer[9] called attention to the use of paraffin films in dermatology not only for the healing of leg ulcer, but also and most especially in eczema, neurodermatitis, prurigo and roentgen-ray burns. While it did not always secure healing, it never failed to lessen the itching promptly. It has also been recommended in herpes zoster.[10]

COLLODIONS

Collodions are solutions of pyroxylin (soluble gun cotton) in a mixture of ether (3 parts) and alcohol (1 part). When this solution is painted on a surface exposed to the air, the alcohol and ether evaporate, leaving a thin film.

These preparations are intended to furnish a waterproof film, which may be useful to cover small skin defects, provided the surface is sterile and dry. They are irritating, while fluid, on account of the presence of volatile solvent, and simple collodion is unpleasant because it contracts when it dries. There is a flexible collodion (official) made so by the addition of 3 per cent of castor oil and 2 per cent of camphor, which is somewhat better to use than the other kind, unless the contractile effect is desired.

Collodions may also serve for the prolonged application of medicament to the skin. The National Formulary contains a number of examples of medicated collodions, among which may be mentioned the styptic collodion, containing 16 per cent tannic acid, and a corn collodion, under the name compound salicylic collodion, whose action is due to 10 per cent of salicylic acid. The presence in this preparation of 10 per cent of fluidextract of cannabis is irrational, as the fluidextract cannot do any more than merely give a green color to the preparation. Before applying this "corn collodion," one takes a prolonged hot foot bath and scrapes or trims off all the easily removable epidermis. The process is repeated daily until a satisfactory result is secured.

(To be continued)

Medical Treatment of Gastric Ulcer.—I am a great believer in the medical treatment of gastric and duodenal ulcer so long as no hour-glass contraction or pyloric obstruction is present. The danger of failing to recognize that a chronic ulcer is becoming malignant is not great, as the roentgen ray generally settles the question at once. But in the very earliest stages the appearance may still be that of a chronic ulcer. In such cases the immediate result of treatment does not help, as the symptoms disappear as quickly as in an uncomplicated ulcer. The crater of the ulcer also becomes smaller, though it does not disappear completely as it does in nearly all cases of chronic gastric ulcer. But what is of far more importance is that occult blood persists, however long the treatment continues and however well the patient appears to get. If, therefore, at the end of a fortnight's treatment symptoms are still present, or at the end of a month the crater has not either disappeared or become much smaller, or, most important, if occult blood is present in undiminished quantity, an operation should be advised without further delay.—Hurst, A. F.: *Guy's Hosp. Rep.* **75**:403 (Oct.) 1925.

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[8] Sollmann, Torald: Convenient Devices for Melting Paraffin for Burns, J. A. M. A. **68**: 1895 (June 23) 1917.

[9] Kissmeyer, A.: Ugesk. f. Læger, April 7, 1921.

[10] Fox, Howard: Relief of Pain in Herpes Zoster by Paraffin, J. A. M. A. **79**: 1979 (Dec. 9) 1922.

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SATURDAY, JANUARY 9, 1926

RESUSCITATION FROM CARBON MONOXIDE POISONING

The frequent occurrence of fatal poisoning with carbon monoxide—the "coal gas" of former days—has become a matter of public concern. The situation[1] is the more deplorable because, unlike the menace of infectious disease or the incidents of increasing age, intoxication with carbon monoxide is a danger that can be and ought to be almost completely eradicated. This becomes the more important when we consider Drinker's assertion that at the present time carbon monoxide poisoning from all sources—fires, automobile exhaust, industrial accidents and manufactured gas—is a more serious medical problem in the United States than is poliomyelitis or smallpox. Accordingly, there is more than passing interest in the report[2] that one of the newest procedures for emergency treatment—the inhalation of oxygen-carbon dioxide—has proved to be highly satisfactory.

The rationale of the method involves the administration of a mixture of 5 per cent of carbon dioxide and 95 per cent of oxygen by a special inhalator, in accordance with the suggestions of Henderson and Haggard of Yale University. It utilizes the stimulating effect of carbon dioxide on breathing, in order to get a high concentration of oxygen into the lungs and thereby to displace the carbon monoxide that deprives the blood pigment of its indispensable oxygen-carrying potency. The evidence collected since the recommendation of the treatment was published by the commission of the American Gas Association in 1923 indicates that the inhalation technic is exceedingly valuable in mild gassing, and in relieving or preventing the occurrence of headache, nausea and attendant symptoms. If in serious cases the patient is still breathing, he may be revived rapidly and thoroughly. Furthermore, it has proved practicable to use the inhalation treatment with prone pressure artificial respiration, when breathing has ceased.

Drinker's report of the absolute unanimity of feeling, whenever the proposed method has been tried, that it represents a decided advance over former practices, taken in consideration with the competence of the investigators, including W. B. Cannon, D. L. Edsall, H. W. Haggard, L. J. Henderson, Yandell Henderson and F. W. Peabody, who were responsible for the proposals, should warrant vigorous extension of facilities for treatment. Combined with this there should be a further campaign of education, particularly among those most likely to be engaged in rescue work. There should be no further "perpetuation of ignorance." Gas poisoning is not like the simplest forms of asphyxia. Vigorous methods of relief must be instituted. Oxygen cannot be given without apparatus. Hence, the commission has advised that all persons who may come in contact with cases of gas poisoning should be trained in artificial respiration, and that they should have inhalation apparatus for use at the earliest possible moment.

DEATHS OF PHYSICIANS IN 1925

During 1925, The Journal recorded the deaths of 2,483 physicians in the United States, almost the same number recorded in the previous year, which was 2,486. To make a comparison of the two years, the present tabulation will follow closely the editorial of last year. Adding 2 per cent to the total number of deaths reported, on account of delayed reports and possible omissions, we estimate the number of physicians who died during 1925 at 2,532. With a total of 147,010 physicians in the United States as noted in the American Medical Directory, the number of deaths is equivalent to an annual death rate of 17.22 per thousand, which is a slight decrease over last year. The average annual death rate for physicians, as computed by The Journal for the last twenty-four years, is 17.08.

Ages.—The age at death of 2,448 physicians whose age was stated varied from 25 to 107 years. Twenty-one of the decedents were under 30 years of age; 119 were between 31 and 40; 368 between 41 and 50; 560 between 51 and 60; 665 between 61 and 70; 489 between 71 and 80; 207 between 81 and 90, and eighteen between 91 and 99. There was one death at the age of 107 (The Journal, Oct. 3, 1925). The largest number of deaths occurred at ages 66 and 67, the number dying at each of those ages being seventy-nine. The largest number of deaths reported at any given age last year was at 65. There were more deaths reported in August than in any other month (243); the smallest number was reported in December (155).

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[1] Resuscitation from Gas Poisoning, editorial, J. A. M. A. **81**: 581 (Aug. 18) 1923; The Health Hazard of the Automobile, ibid. **81**: 932 (Sept. 15) 1923; The Relief of Intracranial Symptoms in Carbon Monoxid Asphyxia, ibid. **82**: 1783 (May 31) 1924.

[2] *Drinker, C. K.:* The Efficiency of the Oxygen-Carbon Dioxide Treatment of Carbon-Monoxide Poisoning, J. Indust. Hyg. **7**: 539 (Dec.) 1925.

Causes of Deaths.—Among 2,420 deaths for which causes were given, diseases of the circulatory system accounted for 872, the largest number by systems. Of these, heart disease caused 559 deaths, angina pectoris being specified in ninety, myocarditis in eighty-one, acute dilatation in twenty, endocarditis in fourteen and valvular disease in twelve; cerebral hemorrhage was specified as the cause of 233 deaths, and was the second most frequent cause given, as it was last year. Diseases of the respiratory system, exclusive of tuberculosis, accounted for 278 deaths, of which 222 were due to pneumonia, twenty-six to influenza, twelve to asthma, four to pulmonary edema, and two to cancer of the lung. Diseases of the genito-urinary system caused the death of 227 physicians, of which number 161 were due to nephritis, forty-one to uremia, fourteen to diseases of the prostate, and one to hypernephroma. Diseases of the digestive system, exclusive of cancer and diabetes mellitus, accounted for 108 of the deaths reported, of which thirty-three were due to appendicitis, sixteen each to peritonitis and cirrhosis of the liver, nine to gastric ulcer, two to duodenal ulcer, thirteen to cholecystitis or gallstones, ten to acute intestinal obstruction, two to abscess of the liver, two to enteritis, and one each to atrophy of the liver, pancreatitis and colitis. Among the so-called general diseases, cancer accounted for 118 deaths. The organs most frequently cancerous were the stomach, twenty-six; intestine, twelve; pancreas, eight; prostate, seven; throat and adjacent parts, eleven, and the liver and bladder, each six. Tuberculosis under this classification was the second most frequent cause of death given, with fifty-two; then erysipelas, eight; typhoid fever, seven; scarlet fever, two; leukemia, three; diphtheria, alcoholism, pellagra, acute articular rheumatism and purpura hemorrhagica, each one. Diseases of the nervous system caused seventy-three of the deaths reported, of which nineteen were due to some form of paralysis; nine each to brain tumor and meningitis; seven to paresis; six to epidemic encephalitis; five to insanity; two each to multiple sclerosis, hiccup, brain abscess and paralysis agitans, and one each to concussion of the brain, tumor of the spinal cord, and transverse myelitis. The cause was not given in sixty-three deaths reported, and 234 deaths were ascribed to senility, each of the decedents being more than 70 years of age, with no other cause stated. It is obvious that there is much to be learned about causes of deaths among aged physicians, and assistance in ascribing more definite causes will be greatly appreciated from all persons who send reports.

Accidents and Homicides.—There were eighty-three deaths reported due to accidents. The automobile was responsible for forty; falls, fourteen; drowning, seven; firearms, six; burns, four; grade crossings, three; asphyxiation, three; roentgen-ray burns, two; poison, two; the airplane, street car and electric shock, each one. There were three homicides; last year, thirteen.

Suicide.—Fifty-nine physicians ended their lives by suicide: thirty with firearms, five with poison, four with morphine, two with phenol, two by drowning, two by jumping from windows, and one with gas; in thirteen instances the method was not stated.

Positions.—Among the physicians who died in 1925, there were 137 who served in the World War; eighty-two who were Civil War veterans, and twenty-three who were Spanish-American War veterans. There were eighteen who had been members of state legislatures; eighty-three, members of boards of health; fifty-four, members of boards of education; nine, members of boards of medical examiners; eighteen, mayors of cities; twenty-six, coroners; five, postmasters; fifteen, authors; two, editors; ten, bank presidents; four, lawyers; four, dentists; twenty-one, druggists, and one, a missionary.

Association Officers.—One trustee of the American Medical Association died during the year. There were also one who had formerly been on the board of trustees; one former vice president; two former members of the House of Delegates, and nine who were former presidents of state medical associations.

Looking back in THE JOURNAL twenty years, we find that sixty-two physicians died under 30 years of age in 1905, while in 1925 there were only twenty-one; then, there were 103 who died between 70 and 80 years of age, whereas in 1925 there were 489; then, there were 239 who died between 80 and 90 years of age, and in 1925 there were 207 between 81 and 90; then, there were twenty-five who died beyond 90 years of age, and in 1925 there were nineteen; then, there were two who passed the century mark, and last year there was only one.

THE SITE OF FORMATION OF BILE PIGMENT

After the decades during which it was firmly believed that the bile pigments are formed in the liver alone, the proof that bilirubin accumulates progressively in the body when this organ has been excluded came as a contribution of unexpected importance to physiology.[1] The occurrence of jaundice has taken on a new meaning; it has become necessary to modify some of our inherited conceptions regarding hepatic function. There are, for example, types of hemolytic icterus in which the liver does not seem to be concerned. In such instances bile pigments may be present in the blood and urine, unaccompanied by bile salts—so-called dissociated icterus. Hence, the old dictum of the essential implication of the liver in jaundice can no longer be upheld.[2]

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[1] Origin of the Bile Salts, editorial, J. A. M. A. **83**:444 (Aug. 9) 1924; The Formation of Bile Pigment, ibid. **85**:271 (July 25) 1925; Bile Pigment as an Expression of Blood Destruction, ibid. **85**:358 (Aug. 1) 1925; The Origin of Urobilin, ibid. **85**:518 (Aug. 15) 1925; Liver Function Tests, ibid. **85**:1062 (Oct. 3) 1925; The Significance of Urobilinuria, ibid. **85**:1491 (Nov. 7) 1925.

[2] A Review of literature is given by Wells, H. G.: Chemical Pathology, Ed. 5, Philadelphia, W. B. Saunders Company, 1925.

The conception of the extrahepatic formation of bile pigments has received further corroboration in the demonstration by Mann, Bollman and Magath[3] that bilirubin is formed in the body even after the surgical removal of all the intra-abdominal organs, thus conclusively showing that there is an extra-abdominal source of bilirubin and that neither the liver nor any other intra-abdominal organ is necessary for its formation.

Investigators at the Mayo Foundation[4] have gone a step further in attempting to locate specific organs or tissues that may be concerned in pouring the pigment into the circulation. The results of the experiments show conclusively that bilirubin is added to the blood as it traverses the spleen and bone marrow. Bilirubin was not added to the blood while it was passing through any of the other tissues studied, which included practically all the tissues in the body except the liver. The amount of bilirubin detected in these tissues was so small that it was very evident that bilirubin was not being formed in them. Whether or not bilirubin is formed in the liver has not been determined. In any event, the spleen and bone marrow are definitely proved sites of the formation of bilirubin. It has been suspected that bilirubin arises where the reticulo-endothelial cells are abundant. Students of the subject now regard this hypothesis as correct and further believe that the cells of the same type in the liver can also form bilirubin. The cells forming bilirubin, they add, would thus be rather widely distributed, and as a tissue would be located mainly in the spleen, bone marrow and liver, although occurring in other places, such as the lymph nodes. They further regard it as highly probable that this definitely proved, rather wide distribution of the cells capable of forming bilirubin will correlate many of the seeming contradictions and divergent experimental and clinical observations on the formation of bile pigment and jaundice. One thus gains the impression that the bilirubin-forming tissue greatly exceeds that required for the ordinary needs of the body. Probably only a small part of this tissue is active at any one time. As Mann and his co-workers point out, possibly those bilirubin-forming cells located in the spleen, where they had access to a generous blood supply and where their product would pass directly to the liver to be excreted, would respond to a lower threshold of hemoglobin than the same type of cell in any other part of the body. If the foregoing conjectures are true, the investigators conclude, they will explain many uncorrelated facts; for instance, the variations in the effect of splenectomy on changes in the liver, lymph nodes and bone marrow; the variability in the rate of the formation of bilirubin, and the various types of jaundice.

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[3] Mann, F. C.; Bollman, J. L., and Magath, T. B.: Am. J. Physiol. **69**: 393 (July) 1924.

[4] Mann, F. C.; Sheard, C.; Bollman, J. L., and Baldes, E. J.: The Site of the Formation of Bilirubin, Am. J. Physiol. **74**: 497 (Nov.) 1925.

Current Comment

EXTREME REQUIREMENTS IN MEDICAL EDUCATION

The article by Dr. Henry A. Christian in a recent issue of *Science* calls attention to the advantages and likewise the dangers to be considered in the development of highly endowed and equipped medical schools. The author points out clearly that high entrance requirements or extreme limitation of enrolments, while they may result in the securing of a few highly skilled and efficient graduates, may at the same time eliminate many brilliant minds. There are doubtless many students who, under the special advantages furnished, would bring great credit to themselves and to the institution, even though their preliminary education may be only average and who, for that reason, would hardly be admitted under higher entrance requirements or where classes are limited to smaller numbers. Such students who, under exceptional hardships, have been enabled to secure the average preliminary training, but who through that very process have developed tenacity, perseverance, efficient methods, unusually good judgment and other high personal characteristics, should be given every encouragement. The author suggests the possibility, therefore, that a large student body would be more advisable but with special provision whereby those especially gifted could be discovered. "There is much to indicate," he said, "that the small school has not quite measured up to its expectations." The holding of admission requirements more to the average, rather than to the extreme, and the admission of reasonably large classes will not only open the way for the brilliant minds who otherwise would be excluded, but also enable the institutions to utilize their larger resources in the way of endowment, equipment and teaching facilities for larger numbers of highly qualified practitioners. Under careful methods, these larger classes cannot fail also to include larger numbers of exceptionally efficient graduates.

THE ANEMIAS DUE TO RADIOACTIVE SUBSTANCES

The contributions recently appearing in The Journal[1] on the dangers of radioactive substances are both timely and elucidating. They warn against subtle menaces that represent practically a heretofore unrecognized form of occupational poisoning in which the use of radium, mesothorium and radiothorium plays a part. The timeliness of the scientific study of the untoward experiences of certain workers handling these products lies in the fact that the greater dangers at least can be averted by improved industrial procedures. What this may mean is indicated by the report that it has been possible in the past for employees unwittingly to ingest and absorb greater amounts of radioactive elements than are ever given in expectation of therapeutic results. The local effects of radioactive elements have been recognized for some time. In the case of the persons accustomed to introduce such products into the oral cavities through the objectionable habit of pointing in their mouths the tips of brushes dipped in luminous paints, the lesions are due to irritative radiation. Necrosis of the jaw may result. The harm is accentuated by the increased bacterial virulence of the organisms in the mouth caused by the irritative or stimulative effects of small amounts of radiation. Far more insidious, however, are the scarcely suspected remote effects of radioactive elements once introduced into the body. There is no known way of eliminating, changing or "neutralizing" them while, according to Martland and his co-workers, they form fixed deposits in the main organs of the reticulo-endothelial system, chiefly the spleen, bones, marrow and liver. Here they continuously emit radiations until they decay according to their individual life history. Primarily, in these situations, they act as irritants to the adjacent erythroblastic and leukoblastic centers. The studies have emphasized in unanticipated ways the serious late effects of such radioactivity in the body. As the latest investigators have described the effects on the hematopoietic system, small doses of radioactive elements increase temporarily red and white cell production. After a shorter or longer time, small or larger doses cause partial or almost total destruction of leukocytes and a diminution in the erythrocytes, producing a severe anemia that simulates the pernicious anemias of regenerative and aplastic types. The same symptoms have long been attributed to a variety of pathogenic agencies. In view of the significant fact that it is possible by means of a sensitive electroscope to detect radioactivity in the expired air of persons harboring active deposits, a method of distinctive diagnosis is now at hand. The demonstrated cell-destructive potency of radioactive substances and the unsuspected late effects that they may initiate should serve as a vigorous warning to all who promote radioactivity as a therapeutic measure. In no field is conservatism more emphatically demanded until our knowledge has been enriched by dependable information.

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[1] Hoffman, F. L.: Radium (Mesothorium) Necrosis, J. A. M. A. **85**: 961 (Sept. 26) 1925. Martland, H. S.; Conlon, Philip; and Knef, J. P.: Some Unrecognized Dangers in the Use and Handling of Radioactive Substances, ibid. **85**: 1769 (Dec. 5) 1925.

NEW WORK ON PYORRHEA

A new effort to establish a specific causative organism for pyorrhea and to investigate its remote effects has just been made public.[1] In the selection of material for study, only such patients were chosen by the author as gave evidence of some condition apparently secondary to the pyorrhea. Of the various organisms that have been incriminated as causative agents—streptococci, staphylococci, pneumococci, *Micrococcus catarrhalis*, *B. fusiformis*, certain spirochetes and *Endameba gingivalis*—the investigation was again limited to streptococci, as being the most likely of the group to be the cause of secondary disease. For practical purposes, the investigator accepted the classification of streptococci promulgated by Holman, who divided all organisms of this class into two large groups, hemolytic and nonhemolytic, with a subdivision of each of these groups into eight subclasses based on their action on certain differential sugars. Adequate care was taken to prevent contamination of the cultures by mouth organisms. Pneumococci were excluded, and in every case a pure culture of streptococci was obtained. The results showed that "(1) streptococci are constantly present; (2) they belong to the nonhemolytic group, and (3) they include different fermentative types; e. g., mitis, salivarius and fecalis." Virulence of the organisms found was low. In the organs of experimental animals injected with isolated organisms, the following secondary pathologic changes were found: in the heart, endocarditis; in the kidney, interstitial nephritis and abscesses; in the bones, slight osteolysis and some evidence of aplasia in the marrow; in the spleen, granules in the cells and large amounts of hemosiderin; in the stomach in one instance, ulcers, and in the aorta, atheroma. Extremely interesting, however, is the fact that arthritis was not found in those animals inoculated with the usual nonhemolytic strains.

CONFESSIONS IN THE DIPLOMA MILL SCANDAL

Since the publication of the Missouri diploma mill exposé about two years ago, William P. Sachs and Robert Adcox, two members of the ring, have turned state's evidence and issued confessions. The aplomb with which each told his story, and the evident tendency toward exaggeration, suggest an exalted ego. Their statements, unless supported by the evidence which probably forced the confessions, are perhaps as unreliable as the credentials they were selling. Sachs has claimed that many thousands of spurious diplomas were issued in the United States. Evidently he refers to credentials rather than medical diplomas. Had there been so many medical diplomas, the American Medical Association would certainly have known of it owing to the close record kept of the licensing of physicians. In the "confession" of Robert Adcox, those named were persons regarding whom evidence to prove their connection with the selling of spurious diplomas was already available in abundance. But there his effective testimony ceased. He continued, nevertheless, to cast innuendo and suspicion on unnamed members of unnamed state licensing boards, as accomplices in the diploma traffic. He should be required to name the persons thus defamed, so that the house-cleaning can be more complete; otherwise his testimony is of little or no value. Meanwhile, the testimony offered by Adcox and Sachs should not be considered sufficient to warrant their exemption from the penalty of their misdeeds. The revocation of the charters of two legally chartered diploma mills will be of no value if the conspirators themselves are allowed to go free. The way to discourage spurious diploma traffic is to require those engaged in it to serve a penitentiary sentence. This method proved effective with "Dr. J. Armstrong, et al.," who conducted a series of diploma mills during the latter

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[1] Thompson, Muriel J.: An Experimental Study of the Streptococci Found in Pyorrhoea Alveolaris, Edinburgh M. J. 32:781 (Dec.) 1925

1890's. A sentence of fifteen months in the federal penitentiary likewise discouraged J. W. Decker of Texas, of Gate City Medical College fame, from further continuing the business. Similar action would be more effective also in the present instances.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Chiropractor Jailed.—The supreme court having affirmed the sentence imposed last May, James A. Robinson, a chiropractor of Selma, was placed in the county jail, Dec. 5, 1925, it is reported; fines of more than $500 had been assessed against Robinson by the court.

CALIFORNIA

Society News.—Dr. Francis M. Pottenger addressed the annual meeting of the Los Angeles County Medical Society, Los Angeles, Dec 17, 1925, on "The Curability of Tuberculosis," illustrated by lantern slides.

Abrams Estate Sued.—It is reported that the United States is suing the estate of the late Dr. Albert Abrams, founder of the notorious "electronic reactions of Abrams," for $500,000 alleged to be due the country because of income tax evasions from 1920 to 1924.

Dr. Dewey Honored.—The eightieth birthday of Dr. Richard S. Dewey, Pasadena, was celebrated, Dec. 6, 1925, by members of Sigma Phi Fraternity living in Southern California. Dr. Dewey was for many years medical director of the Milwaukee Sanatorium, at Wauwatosa, Wis., and previous to that was in charge of the Illinois State Hospital at Kankakee for many years.

Physicians Fined.—Dr. William A. Strole, Los Angeles, it is reported, pleaded guilty, recently, in the United States District Court, Southern California, to a charge of violation of the Harrison Narcotic Act and was sentenced to pay a fine of $500. Dr. Frederick K. Lord, Ceres, who was arrested recently on charges of driving and operating a motor vehicle on the public highway while under the influence of liquor, it is reported, pleaded guilty and was sentenced to pay a fine of $200 and in default thereof be imprisoned in the county jail one day for each $2 of the fine.

Contagious Disease Declines.—California, according to the state health officer, enjoyed better health during 1925 than at any other time in the last six years. Although there has been a "tremendous" growth of population during these years, he said that fewer cases of diphtheria, scarlet fever and typhoid were reported this year than in any one of the previous five years. There were 1,135 cases of typhoid fever in the state in 1920 and 793 in 1925 up to December 1; however, there were 1,777 cases in 1924; 5,793 cases of diphtheria were reported in 1920, and 5,034 in 1925 up to December 1, but in 1924 there were 11,110 cases. Scarlet fever in 1925, it is said, decreased about 50 per cent over the preceding year; however, there were fewer cases in 1920 (4,117) than there were in 1925 up to December 1. Immunization against diphtheria undertaken by health departments has contributed to the decline in the number of cases of diphtheria; the other records of decrease show that local health departments are making use of modern methods of preventive medicine. The state, the cities and counties, the commissioner says, are making liberal expenditures for the protection of public health.

Stanford University Medical School.—The dean of Stanford University Medical School writes that the next Lane medical lecturer will be Dr. R. Magnus, professor of pharmacology, University of Utrecht, Holland, who will probably deliver his lectures in December, 1927. The recent Lane lectures delivered by Prof. Vittorio Putti were presented in admirable manner, the dean says, and aroused great interest among the physicians who attended.——Dr. Emile F. Holman, who was appointed associate professor of surgery last year, entered on his duties at this school, Dec. 1, 1925.——The teaching in public health and preventive medicines has been completely reorganized, and Dr. Ernest C. Dickson, professor of medicine, placed in charge as acting executive.——The medical faculty decided last year to increase the number of students to be admitted to the medical school to fifty in each class, and the registration this year is freshmen, 46; sophomores, 50; juniors, 35; seniors, 28; student interns, 27; total 186. The university has received a donation of $4,000 from Roy M. Bishop, San Francisco, to support research on diseases of the kidneys, which is being done by Dr. Thomas Addis, and a donation of $5,000 from Mrs. Dorothy Fries Lilienthal to establish a scholarship in memory of her mother, to be known as the Florence Hecht Fries Scholarship in Medicine.

CONNECTICUT

Well Child Conference.—The state department of health established a Well Child Conference at Southington, recently. There are now forty-three similar conferences held monthly in the state. The health center building proved inadequate for the occasion and three additional rooms were placed at the disposal of the conference. With the assistance of local physicians, 110 preschool children were examined.

DISTRICT OF COLUMBIA

Venereal Disease Remedies.—The legislative committee of the Retail Druggists Association of the District of Columbia, after a careful review of the local situation, concluded that it is illegal in view of the recent law to sell over the counter proprietary preparations that are obviously intended as remedies for venereal disease. The committee found that most of the drug stores in the District years ago discontinued selling this type of remedy. The committee further recommended that drugs and combinations in capsule form or otherwise, which are intended for dispensing on physician's prescriptions, be dispensed only in that manner.

"Bishop" Holler of "Oriental University" Found Guilty.—Helmuth P. Holler, president of the "Oriental University," and self-styled "Bishop" of the Theomonistic Church, was found guilty, Dec. 22, 1925, on a "diploma mill" indictment, by a jury in the Criminal Court of the District of Columbia. He was convicted of the charge of conspiracy to use the mails to defraud. The conspiracy consisted of the sale or issuance of degrees and diplomas to students of the university under false pretenses; that is, a student could obtain a degree as master of surgery, dentistry, medicine or any other science without studying or having actual laboratory or demonstration work pertaining to the subject under study. The investigation into the workings of the university began after several fatalities had occurred among the patients of the "postage stamp" doctors who were "graduated" from the university and held degrees which stated that they were competent to practice medicine or surgery. The university pretended to teach many arts and sciences; it even "ordained" ministers of the Theomonistic Church. According to the arguments of Lee A. Rover and M. Pearl McCall, assistant district attorneys, the university, founded on "lies, deceit and dishonesty," flooded the United States and many other countries with worthless diplomas which were issued for a price, regardless of whether or not the person receiving the diploma had ever put in as much as an hour of study. Holler now faces a penalty of two years in prison and he can be fined $1,000. Dr. Robert Adcox and Sam Kaplan, St. Louis, codefendants with Holler, pleaded guilty some time ago and are out on bond. They testified for the prosecution. Dr. Ralph A. Voigt of Kansas City, also a codefendant, was found not guilty. He was tried with Holler. The case has been on trial for two weeks. The jury deliberated less than an hour.

ILLINOIS

Chiropractor Fined.—A. E. Lill, a chiropractor of Belleville, was fined $100 and costs, Dec. 2, 1925, it is reported, on a charge of practicing without a license.

Personal.—Dr. George R. Seward, Peoria, has been elected county physician.——The home and furnishings of Dr. John H. Donovan of Windsor were destroyed by fire, Dec. 26, 1925. ——Dr. John W. H. Pollard, former health officer of Quincy, has been appointed health superintendent for the eleventh district of Illinois, comprising Adams, Hancock, McDonough, Schuyler, Brown, Pike and Calhoun counties, with headquarters in Quincy.

Safe Oysters.—There is a list of 178 shippers of oysters who have been certified by the U. S. Public Health Service and by the state health departments in their respective states to show that oysters from these sources are produced in beds free from pollution, and that they are handled and shipped under sanitary conditions. The list will be added to from time to time as other shippers meet the sanitary requirements; in the meantime, the state health officer recommends that oysters be purchased from shippers named on the list given in *Illinois Health News* (December, 1925).

The Pneumonia Problem.—The mortality from pneumonia in Illinois has been less than 6,000 in only five years since 1902; one of these years was 1905, when 5,877 deaths were due to pneumonia; another was 1919, the year after the influenza pandemic, when only 3,800 in the state died of pneumonia, and another was last year, when 5,867 persons died of pneumonia. The greatest annual mortality from pneumonia occurred in 1918, when the death list was 10,957. The state health officer considers that pneumonia can be prevented, and devotes the December, 1925, number of *Illinois Health News* largely to information concerning this subject.

Chicago

Society News.—Dr. Winford P. Larson, Minneapolis, addressed the Chicago Society of Internal Medicine, Dec. 21, 1925, on "Immunization Against Diphtheria and Scarlet Fever with Toxin Detoxified with Sodium Ricinoleate"; Dr. Ruth Tunnicliff, on "A Diplococcus in Measles," and Elson M. Fisher, on "Effect of Roentgen Rays on the Pancreas." ——Dr. Robert B. Preble addressed the Chicago Medical Society, January 6, on "Thirty-Five Years' Experience with Pneumococcus Pneumonia," and Dr. Charles S. Williamson, on "Management of the Simple Anemias in General Practice."

Iroquois Memorial Hospital.—An average of about 9,000 treatments a year are given in the Iroquois Memorial Emergency Hospital, chiefly accidents and emergency cases, happening in the downtown section. A memorial meeting was held, Dec. 30, 1925, at the hospital, 23 North Market Street; twenty-two years ago, the Iroquois Theater disaster occurred. This hospital, provided by friends and relatives of those victims, is operated by the Chicago Department of Health, in cooperation with an advisory committee from the Iroquois Memorial Association. The facilities of the hospital are used also to examine suspected typhoid fever carriers and for clinics. It is never closed.

Personal.—Dr. Isaac A. Abt has been appointed attending physician in diseases of children at St. Luke's Hospital.——Edwin O. Jordan, Sc.D., professor of bacteriology, University of Chicago, will give a lecture in Orchestra Hall, January 11, under the auspices of the president and trustees of the university, on "The Conquest of Disease."——Dr. Irving S. Cutter, dean of Northwestern University School of Medicine, Chicago, addressed the annual meeting of the Kalamazoo Academy of Medicine, Dec. 15, 1925.——Dr. Carl Beck sailed, January 5, for Europe to invite certain scientists and physicians to the next meeting of the Inter-State Post-Graduate Assembly of North America, and to arrange for the next Post-Graduate Clinic tour to Europe.

Dr. Bridge's Will.—About $6,000,000 will ultimately be given to charitable and educational institutions under the will of the late Dr. Norman Bridge, an inventory of which was filed in probate court, January 4. The estate, on the death of the widow, is to be divided equally between the University of Chicago for medical education, the University of Southern California Medical Department, the Barlow Sanatorium Association of Los Angeles, the Southwest Museum Incorporated, Los Angeles, and La Vina, a sanatorium in Pasadena; each of the five institutions, it is reported, will receive about $1,200,000. There were ten $10,000 bequests also, among others to Northwestern University, University of California and the Chicago Home for Incurables. Before his death (The Journal, Jan. 17, 1925), Dr. Bridge had given more than $1,000,000 to various institutions.

Dean Eycleshymer Is Dead.—Dr. Albert C. Eycleshymer, dean of the University of Illinois School of Medicine, was shot and killed accidentally at his home in Oak Park, Dec. 30, 1925. Dr. Eycleshymer, who for some time had been in ill health, was at the time of his death on a year's leave of absence from the university. He was formerly connected with the anatomy departments of the University of Chicago and St. Louis University, and since 1913, had been professor and head of the department of anatomy of the University of Illinois, and, since 1917, dean of the medical school. Dr. Eycleshymer was a member of the National Board of Medical Examiners, the author of publications on anatomy, and winner of the grand prize at the Louisiana Purchase Exposition in 1904 for work on embryology; he graduated from the University of Michigan in 1891; he received a Ph.D. from the University of Chicago in 1895, and an honorary M.D. from St. Louis University in 1911.

INDIANA

Report of Committee on Medical Education.—The committee on medical education of the Indiana State Medical Association investigated the condition of medical service in rural districts in Indiana. It was found in summarizing the replies to the questionnaire that there are 25 per cent fewer physicians in medical societies which reported than there were twenty-five years ago; in the opinion of the forty secretaries reporting, one physician today can give the service it took two and two-thirds physicians to give twenty-five years ago. No towns now receive poorer service than in the earlier days. The report shows also that twenty out of forty counties have county hospitals, and that five counties have private hospitals. There is nothing to indicate an alarming lack of medical service in rural Indiana, according to this report.

IOWA

Personal.—Dr. Charles L. Hawk, who has practiced medicine in Alaska for a number of years, has joined the staff of the University Hospital at Iowa City under Dr. Arthur Steindler of the orthopedic department.

Dr. Wallace Deputy State Health Officer.—Dr. James Wallace of the International Health Board, and former director of the bureau of epidemiology of the state board of health of Utah, has accepted the appointment as deputy state health commissioner of Iowa. During his service in Utah, Dr. Wallace conducted a goiter survey of about 110,000 school children, which is being followed by campaigns of goiter prevention in Utah.

KENTUCKY

Ephraim McDowell's Home.—At the recent meeting of the Southern Surgical Association in Louisville, a resolution was adopted endorsing the project of purchasing the home in Kentucky of Dr. Ephraim McDowell, "father of ovariotomy," as a monument to his memory.

LOUISIANA

Society News.—Dr. Maurice J. Gelpi has been elected president of the Orleans Parish Medical Society. Drs. James Birney Guthrie, Marcy J. Lyons and Euclid J. Richard, vice presidents; Dr. Henry Theodore Simon, secretary, and Dr. John A. Lanford, treasurer. The new officers will be installed, January 11.

Board of Examiners Meeting.—The state board of medical examiners met in New Orleans, Dec. 10-12, 1925, and decided to grant reciprocity to four applicants from the state board of medical examiners of Texas. At this meeting eighteen physicians, sixteen midwives and five applicants for reciprocity appeared before the board. A representative of the National Board of Medical Examiners conferred with the Louisiana board at this meeting.

Personal.—Dr. William J. Mayo, Rochester, Minn., recently addressed the students of Tulane Medical School in the Miles amphitheater at Charity Hospital, New Orleans.——Dr. William Scheppegrell, New Orleans, has been reelected president of the Louisiana Parks Association.——Dr. Lucy S. Hill has been made an assistant in the maternity and infancy bureau of child hygiene of the state board of health.——Dr. Frank H. Walke, Shreveport, was recently elected president of the American Railway Surgeons Association.——Dr. Aldo Castellani arrived in New Orleans from London, January 3, to take up his work as professor and head of the department of tropical diseases at Tulane University of Louisiana School of Medicine.

MARYLAND

War on "Medicine Men."—The state health authorities are preparing to open war on quack doctors and "medicine men," according to Robert L. Swain, deputy commissioner of food and drugs. The Bureau of Food and Drugs for months has been studying conditions surrounding the manufacture of certain proprietary medicines, for the most part in the negro sections of the city. The negro has a special aptitude for building up the mystery and superstition with which his medicines usually are surrounded. There are many of these so-called manufacturers, and in nearly all cases investigation shows that the state pure food and drug law is being violated. Cases have been reported to the department of many persons having been made ill. The bureau of food and drugs has presented cases to the state's attorney's office, and in one instance a six months' jail sentence has been imposed by the court.

MICHIGAN

Gift for Hospital.—The Niles Hospital Association announced, Dec. 24, 1925, that Mr. and Mrs. F. J. Plym have given $100,000 to purchase and to remodel the "Dresden property" in that city for a hospital. The hospital association is planning now to conduct a campaign to provide additional funds to furnish and equip the hospital; there is already a fund of more than $9,000.

Society News.—Dr. Francis C. Wood, head of the Crocker Cancer Research Institute, Columbia University, New York, will address the Wayne County Medical Society, Detroit, January 22, and give a clinic at the Harper Hospital in the morning.——Dr. W. McKim Marriott, dean and professor of pediatrics, Washington University School of Medicine, St. Louis, will address the Wayne County Medical Society, Detroit, January 11, on "Observations Concerning the Nature and Treatment of Certain Forms of Nephritis."

Personal.—Dr. Leonard W. Brown, for the last six years medical examiner for the Pennsylvania Railroad in Grand Rapids, has been transferred to Fort Wayne, Ind., and is succeeded by Dr. Charles A. Leisher, who comes from Fort Wayne.——Dr. Rush McNair has been elected head of the Kalamazoo Academy of Medicine, to succeed Dr. S. Rudolph Light.——Dr. Harold L. Morris, Detroit, has been elected president of the North Central Branch of the American Urological Association.——Dr. Clayton A. Bullard has been appointed health officer of Royal Oak township.

MINNESOTA

Scholarship in Surgery.—With a legacy left to Drs. William J. and Charles H. Mayo by the late Dr. James W. White, former professor of surgery at the University of Pennsylvania, the board of governors of the Mayo Clinic, Rochester, has established the J. William White scholarship; it will be awarded by the trustees of the Mayo Properties Association to the graduate (either M.S. or Ph.D. in surgery) who, in the opinion of the Medical Graduate Committee, is most deserving of an opportunity for study in surgical clinics in foreign countries.

MISSOURI

Personal.—Dr. James Stewart, state commissioner of health, addressed the Chamber of Commerce, Independence, Dec. 10, 1925, on "Public Health—the State's Obligation to the Community."

Dr. Horton's Indictment Dismissed.—Judge Southren in the Kansas City District Court, Dec. 12, 1925, sustained a motion to quash the indictment against Dr. Ray B. Horton of Purdy, who was charged with third degree forgery in connection with his alleged efforts to obtain medical licenses; Dr. Horton was said to have forged a fictitious name—that of a high school official in Independence, Mo.—to affidavits of credits from that school.

Druggist Not Liable for Prescription Abuse.—According to the *Evening Star,* Washington, D. C., the case of Charles B. Eckart, St. Louis, was set aside by the circuit court of appeals for the eighth district on writ of errors and will not be appealed to the U. S. Supreme Court by the government. Eckart, it is said, was convicted in the lower court on charges of filling prescriptions which he was alleged to know to have been issued by a physician for the purpose of catering to drug addicts. The circuit court pointed out that there was no evidence at the trial of any understanding or agreement between the doctor and the druggist, and that there was no duty resting on the latter to make an investigation. The court held that a prescription issued by a registered physician was a protection to the druggist in filling it, and the judgment of the lower court was reversed in a unanimous opinion.

Society News.—Dr. Robert H. Davis has been elected president of the St. Louis Dermatological Society; Dr. Theodore Greiner, vice president, and Dr. Norman N. Tobias, secretary-treasurer.——Dr. John H. Gibbon, president, American Surgical Association, will give the Hodgen Lecture in the auditorium of the St. Louis Medical Society, January 20, on "Mobilization in the Treatment of Fractures."——The retiring president, Dr. Fred W. Bailey, and the incoming president, Dr. Amand N. Ravold, addressed the St. Louis Medical Society, January 5, at the annual meeting and installation of officers, the last inaugural meeting to be held in the old auditorium. There was a lantern slide demonstration of the new library building and of the proposed auditorium by the architect; an outline of the progress made by the building committee, and the president's reception.

NEW JERSEY

The Rabies Situation.—During the last three years, nine persons in New Jersey have died of rabies; three of them did not receive the Pasteur treatment; in two of the other six, the treatment was begun five days after the persons were bitten, and in the other four cases within forty-eight hours. A total of 526 persons in New Jersey were given the Pasteur treatment in 1923, 1924 and up to Nov. 1, 1925, at public expense. This is only a part of the total number of persons who have been bitten by dogs and who have been treated by practicing physicians. There is no evidence, says the state health department, of any appreciable decrease in the incidence of rabies.

NEW YORK

Hospital News.—The Nassau Hospital, Mineola, recently opened a new wing having a capacity of thirty-six private beds—thirty beds for children and three operating rooms.

Revision of Milk Code.—The state department of health has appointed a committee, which will study the present milk code with a view to presenting to the Public Health Council recommendations regarding the revision of the code. The committee held its first meeting, Dec. 2, 1925; before making a report, it will study other state and municipal milk codes, and the results obtained in various communities, and will confer with officials, dairymen and others. The council will then attempt to formulate a code which will be acceptable to milk producers, and also afford a maximum protection to public health. It is not anticipated that the final revision will involve radical changes from the present code.

New York City

Dr. Bluestone Goes to Palestine.—Dr. Ephraim M. Bluestone, for five years an assistant director of Mount Sinai Hospital, has been appointed director of the Hadassah Medical Organization, which controls most of the medical activities in the Holy Land, and will sail for Palestine the first week in March.

Dr. Harris Appointed Health Commissioner. — Mayor Walker has appointed Dr. Louis I. Harris health commissioner of the city of New York. Dr. Harris, who, under the previous administration, was head of the bureau of preventive diseases, has been in the service of the health department since 1907; he is a lecturer on hygiene at Bellevue Hospital Medical College, chairman of the section on Public Health Administration of the American Public Health Association, a trustee of the United Hebrew Charities, and president of the Association of Tuberculosis Clinics of New York City.

Personal.—Dr. Edward L. Keyes recently addressed the Indianapolis Medical Society, Indianapolis, on "Renal and Ureteral Stones."——Dr. William K. Jacobs has been reelected for three years a member of the board of trustees of the Brooklyn Hebrew Orphan Asylum Society.——Dr. Adolph Stern is now president of the Yorkville Medical Society.——Dr. Joseph Francis Ward has been elected president of the South Brooklyn Board of Trade.——Dr. Seymour Basch has been appointed professor of clinical gastro-enterology at the New York Polyclinic Hospital.——Dr. Anna Hubert has been elected president of the Woman's Medical Association of New York City for 1926.

Lowest Birth Rate on Record.—The birth rate for 1925 in New York City was the lowest on record, according to a report made to the retiring health commissioner by the registrar of records, Dec. 31, 1925. The total number of births recorded during the year was 128,790, which was 1,646 less than the number of births the previous year. The death rate, 11.49 per thousand population, was also the lowest on record with the exception of the year 1921, when it was 11.08. The total number of deaths during the year was 71,863. The outstanding feature of the mortality of 1925, according to the report, was the decrease in the number of deaths from contagious diseases of childhood, and a pronounced decrease in the number of deaths from tuberculosis, there having been 118 fewer than in 1924. Notice was made in the report of the effect of the intense heat in the two weeks ending June 20, 1925, by reason of which from sunstroke alone, the number of deaths was increased by 338.

Society News.—Dr. Béla Schick, head of the children's department, Mount Sinai Hospital, New York, addressed the Utica Academy of Medicine, Nov. 19, 1925, on "Tuberculosis in Children."——Dr. Walter C. A. Steffen of Flushing addressed the Long Island City Medical Society, Dec. 10, 1925, on "Diagnosis and Treatment of Persistent Thymus in Children," and Dr. Denis E. McMahon, Elmhurst, on "The New Medical Practice Act." The society decided at this meeting to publish a year book containing the names of the members of the various committees and transactions of the society, and any other material which the officers deem necessary to publish.——Dr. Trigant Burrow, Baltimore, delivered the presidential address at the midyear meeting of the American Psychoanalytic Association, Dec. 27, 1925, at the Cornell Club, on "Social Evasion." Dr. Clarence P. Oberndorf, New York, spoke on "The Berlin Psychoanalytic Clinic," and Dr. Cornelius C. Wholey, Pittsburgh, gave a moving picture demonstration of "Transition States in a Case of Multiple Personality."——The Bronx Gynecological and Obstetrical Society has elected Dr. Hyman J. Epstein president for 1926.——Dr. Smith E. Jelliffe addressed a joint annual meeting of the Newburgh and Poughkeepsie Medical Societies recently on "Psychanalysis and Organic Disease."

NORTH CAROLINA

License Conditionally Restored.—At the Nov. 12, 1925, meeting of the state board of medical examiners, in Raleigh, the license of Dr. Ira J. Stoner, Durham, was conditionally restored until the next meeting of the board in June, at which time Dr. Stoner will appear before the board with regard to his alleged violation of the Harrison Narcotic Law.

Society News.—The McDowell County Medical Society met at the home of Dr. Donald M. McIntosh, Old Fort, Nov. 24, 1925, when the subject under discussion was "Tularemia."——The Durham-Orange County Medical Society is supervising plans for the erection of a seven story building in Durham for physicians.——The Seaboard Medical Association will hold its next annual session at New Berne, in December of this year, under the presidency of Dr. George A. Caton.

Hospital News.—A license has been issued to the Cumberland County Preventorium by the state board of charities. This is a home near Fayetteville which cares for undernourished children and is maintained by various philanthropic lay organizations and the Red Cross.——The Memorial Hospital at Kinston was opened, Nov. 6, 1925; it is a four-story building costing more than $50,000.00, and a memorial to soldiers of the World War.——An anonymous donor has given $20,000 to purchase 300 acres of land for a new location for the Memorial Orphanage for Negroes near Winston-Salem.——An election to vote on a bond issue of $100,000 to establish a county hospital will be held soon in Cabarrus County.

Annual Banquet.—The Buncombe County Medical Society held its annual banquet at the Battery Park Hotel, Asheville, Dec. 21, 1925; out of town guests present were Dr. L, Lieberman, New York; Dr. Joseph Howell Way, Waynesville; Dr. E. McQueen Salley, Saluda, and Drs. Paul H. Ringer, Carlton B. Mott, D.D.S., and Thomas R. Huffines of the dental profession. Dr. Lieberman gave the principal address on "The Renaissance of Clinical Medicine as Contrasted with Laboratory Medicine." He stressed the importance also of establishing in Asheville a great diagnostic clinic. Officers were elected as follows: president, Dr. Franklin Webb Griffith; vice president, Dr. John W. Huston; secretary-treasurer, Dr. Matthew S. Broun. The retiring president, Dr. Charles C. Orr, Asheville, was presented with a special diploma of the society as having established an attendance record of 100 per cent attendance during his year's service.

OHIO

"Free Medicine" Banned.—The board of health of Portsmouth issued an order recently prohibiting the promiscuous distribution of samples of medicine in automobiles, yards and on porches where children might find them.

Bonds for Hospitals.—The three proposed bond issues to provide funds for tuberculosis hospitals were approved at the November election; they were $735,000 for a new county sanatorium for Stark County; $626,000 for an addition to the children's ward of the Cleveland Sanatorium, and $150,000 for a new county sanatorium in Trumbull County. These new institutions will provide about 250 additional beds.

Goiter Survey Completed.—Dr. Oliver P. Kimball of the Ohio State Department of Health, who completed a goiter survey of Marion, Butler and Washington counties, addressed a public meeting at Middleton, recently, on "The Goiter Situation in That Section." According to the *News Signal*, Dr. Kimball found in an examination of 20,278 school children that 26.5 per cent of boys and 39.2 per cent of the girls had enlarged thyroid glands. The lowest percentage was found in Butler County, where 22 per cent. of boys and 40 per cent. of girls had enlarged thyroids; the percentages in Washington County covering 4,227 children were 28.4 for boys and 39.2 for girls, and in Marion County 28.5 for boys and 37.8 for girls. The survey was made by the state department of health to determine whether the situation would warrant the use of preventive measures.

Health Education by Motor Truck.—The bureau of health education, state department of health, offered the services of its "covered wagon" to county health commissioners after the "fair" season closed, with the result that a schedule of health exhibitions covering several months has been arranged. Illustrated talks are given on subjects of particular interest to the community addressed; motion picture films are exhibited and literature is distributed. The equipment comprises a three-quarter ton truck, thirty-eight reels of film covering twenty-six health subjects, two projectors and an automatic power plant for the exhibition of moving pictures, a physician, and an assistant who is film operator and mechanician. This outfit has covered more than 3,500 miles over state roads. Besides this service, the department conducts a film exhibition exchange from which a health commissioner can borrow films free of charge to be shown in his district.

Personal.—Dr. Martin H. Fischer, Eichberg professor of physiology and head of the department, University of Cincinnati College of Medicine, lectured at the Mayo Foundation, Rochester, Minn., Dec. 7, 1925, on "Colloid Chemistry in Biology and Medicine."——Dr. William K. Ruble, district health commissioner in Clinton County, has been reelected for another term, and Dr. Oliver R. Eylar, Waverly, has been reelected district health commissioner for Pike County.——Dr. Rosco G. Leland, resigned, effective January 1, as chief of the division of hygiene of the state department of health. Dr. Leland goes to Toledo as secretary of the Toledo Public Health Association to succeed Dr. Harry E. Kleinschmidt, who resigned some months ago to accept a position with the state department of health.——Dr. Jackson A. Frank, for several years chief of the bureau of tuberculosis, has been appointed chief of the division of hygiene.——Dr. William A. Quinn has been appointed a member of the board of health of Portsmouth.

OREGON

Portland Academy of Medicine.—The annual meeting of the academy will be held, January 13-15; the annual lectures will be delivered by Dr. George Dick, Chicago, on "Scarlet Fever," and the Joyce Lectures in Surgery by Dr. Edward S. Judd, Rochester, Minn., on "Cholecystitis"; both of whom will also conduct clinics. There will be a dinner in honor of the guests, January 14, at the Portland Hotel, at 6 o'clock.

PENNSYLVANIA

Diphtheria Immunization at Wilkes-Barre.—A total of 6,621 children had been immunized up to Nov. 17, 1925, in the antidiphtheria campaign being conducted in Wilkes-Barre and vicinity; that is said to be more than double the number of children who were immunized in the campaign undertaken two years ago.

Fewer Industrial Accidents.—There were 176,392 industrial accidents in the state during 1925, 2,022 of which were fatal, and 177,539 industrial accidents in 1924, of which 2,209 were fatal. The New Year marks the close of the first decade of the workman's compensation law in the state, and since Jan. 1, 1916, there has been a total of 1,836,681 accidents reported, with 24,699 of them fatal. Last year, compensation payments totaling $12,748,266 were authorized, and since Jan. 1, 1916, a total of $108,690,486 has been authorized by the bureau.

Annual Meeting of Tuberculosis Society.—The Pennsylvania Tuberculosis Society will hold its annual meeting at the Bellevue-Stratford Hotel, Philadelphia, January 19-20. The first day will be given over largely to considering the early establishment of eleven county tuberculosis hospitals which have been authorized by vote of the citizens. Dr. Charles H. Miner, state health commissioner, Dr. Wilmer Krusen, health commissioner of Philadelphia, Dr. Anthony J. Lanza of the National Health Council, Dr. Robert M. Lukens, Dr. Charles J. Hatfield, director of the Henry Phipps Institute, Prof. Charles Edward A. Winslow, Dr.P.H., president, American Public Health Association, among others, will speak. The clinicial program will be held at the Jefferson Hospital Chest Department and at the Henry Phipps Institute.

Philadelphia

Society News.—Dr. Moses Behrend has been elected president of the Philadelphia County Medical Society; Dr. Frederick S. Baldi, vice president; Dr. Henry G. Munson, secretary, and Dr. Edward A. Shumway, treasurer.

Gift to University.—The provost of the University of Pennsylvania announced, January 1, a gift of $250,000 from Mr. Martin Maloney as the nucleus of a fund for the construction within three years of a $750,000 building for the University of Pennsylvania Hospital. The new building will be called the Martin Maloney Memorial Clinic, and this gift is the largest received so far from an individual in the fifteen year campaign for $45,650,000.

UTAH

School for Reserve Officers.—A school for medical reserve officers is being conducted in Salt Lake City under the direction of Dr. Samuel C. Gurney, of the One Hundred and Fourth Division; about one hundred officers are eligible for the course, including fifty-six physicians, twenty-four dentists and twelve medical administrators and two sanitary engineers. The classes will meet on the second and fourth Wednesdays of each month during the winter.

Dr. Kirkwood Appointed State Epidemiologist.—Dr. Robert C. Kirkwood, formerly of Livingston, Mont., has taken up his duties as director of the bureau of epidemiology of the state board of health, succeeding Dr. James Wallace. Dr. Kirkwood served in the army medical corps during the World War at Fort Bayard, N. M., and, following the war, served in the Philippine Islands; previous to that time, he was with the U. S. Public Health Service at Fort Stanton, N. M.; a dinner in his honor was given, Dec. 17, 1925, at the Hotel Utah, Salt Lake City, by the local alumni of Jefferson Medical College.

VIRGINIA

Proposed Rural Hospital.—A committee from the Prince Edward-Cumberland Medical Society is cooperating with civic organizations in Farmville to raise $60,000 within a radius of 35 miles for a forty-bed hospital in that city, for which the Commonwealth Fund of New York has offered to contribute $120,000. It is expected, says the *Virginia Medical Monthly*, that a contract will be let about February.

WASHINGTON

Governor Vetoes Basic Science Bill.—The basic science bill, which passed both houses, was vetoed by Governor Hartley, Dec. 28, 1925. The bill would have required applicants to practice medicine, osteopathy and chiropractic to pass an examination in anatomy, physiology, chemistry, pathology and hygiene before taking the professional examination, the examining board to be composed of five members of the University of Washington. The governor pointed out that while it was desirable to raise the standards of professional groups practicing the healing arts, he did not believe the method proposed conducive to the best results.

WISCONSIN

Society News.—Dr. William E. Robertson, Philadelphia, addressed the Milwaukee Academy of Medicine, Milwaukee, Nov. 10, 1925, on "The Value of Pain and Certain Reflex Phenomena in Diagnosis." The academy met jointly with the Neuropsychiatric Society of Milwaukee, Nov. 24, 1925, when Dr. William O. Krohn gave an address on "Psychoneuroses and Their Medicolegal Significance."

Personal.—Dr. Mynie G. Peterman, associate in pediatrics, Mayo Clinic, Rochester, Minnesota, has accepted the position of director of laboratory and research at the Children's Hospital, Milwaukee.——The governor has appointed Dr. Thomas J. Sheehy of Tomah a member of the state board of medical examiners to succeed Dr. Robert B. Cunningham, and Dr. Wilbur N. Linn of Oshkosh to succeed Dr. Minnie M. Hopkins.——Dr. John R. McDill, former resident of Wisconsin and later professor of surgery, University of Philippines, is now commanding officer of the United States Veterans' Bureau Hospital No. 37, Resthaven, Waukesha.

PHILIPPINE ISLANDS

Hospital News.—The Philippine General Hospital, Manila, observed its fifteenth anniversary with appropriate ceremonies, Sept. 9-10, 1925.

Personal.—Dr. Modesta Ignacio has been appointed senior resident physician in the General Hospital at Manila. She was the valedictorian of her class in the Philippines College of Medicine and Surgery in 1924.——The *Revista Filipina de Medicina y Farmacia* states that Dr. F. C. Gómez has left Manila on a Rockefeller Foundation scholarship for a course of study in industrial hygiene at Harvard.

CANADA

Lister Memorial Fund.—The chairman of the subcommittee of finance reported at the council meeting, Nov. 2, 1925, that the Lister Memorial Fund amounted now to $4,500, and that the objective of $5,000 will be reached before the next annual meeting. The executive committee announces that Sir Charles S. Sherrington, professor of physiology, Oxford University, England, will be the second Listerian orator at the annual meeting in 1927.

Committee to Investigate Quackery.—The executive committee of the Canadian Medical Association announces that, in response to frequent inquiries as to why the association did not investigate certain forms of quackery and charlatanism, a special investigating committee has been appointed to report on fakes, nostrums and quackery, and to recommend action by the association. The members of the committee are Drs. Francis D. McKenty, Winnipeg; Alexander MacG. Young, Saskatoon, and Harold W. McGill, Calgary.

Reduced Fee for Recent Graduates.—The Canadian Medical Association has decided to admit to membership recent graduates at a reduced fee, and to request the provincial associations to make it possible for them to become members of those associations at a similarly reduced fee. The Canadian Medical Association will write each graduate of the last year, offering this privilege, and at the same time, offering the *Journal of the Canadian Medical Association* at a reduced rate. The next meeting of the Canadian Medical Association will be in Victoria, British Columbia, the week of June 1.

GENERAL

Society News.—Dr. Henry R. Storrs, Vancouver, B. C., was elected president of the North Pacific Surgeons' Association at the annual meeting in Spokane, Washington, Dec. 12, 1925; Dr. Park W. Willis, Seattle, vice president, and Dr. Milton G. Sturgis, Seattle, secretary-treasurer.

Automobiles Kill Almost Six Thousand.—The Department of Commerce announces that from Dec. 28, 1924, to Dec. 5, 1925, there were 5,768 fatalities due to the automobile reported from seventy-eight cities of 100,000 population or more in the United States, a daily average of 16.8. In fifty-nine cities in which comparison is possible for practically the same period in the previous year, the total number of deaths due to automobiles was 5,055 and 4,875, respectively. New York City reported 919 automobile fatalities up to Dec. 5, 1925; Chicago, 557; Philadelphia, 288; Detroit, 275; Los Angeles, 213, and Cleveland, 211.

Women's Industrial Conference.—Under the auspices of the Women's Bureau, U. S. Department of Labor, a Women's Industrial Conference will be held in Washington, January 18-21. Delegates from women's organizations throughout the country will be in attendance. Among the speakers will be Dr. Alice Hamilton, assistant professor of industrial medicine, Harvard University Medical School, Boston, and Surg. Gen. Hugh S. Cumming, U. S. Public Health Service; the Marine Band will play at the opening session, which will be broadcast from station WCAP; the conference will close with a dinner presided over by Miss Mary MacDowell, commissioner of public welfare, Chicago.

American Electrotherapeutic Association.—At the midwinter meeting of this association in New York in conjunction with the New England Association and the Philadelphia and New York societies, January 6-9, Dr. Sinclair Tousey, New York, and Dr. James Douglas Morgan, Philadelphia, among others, spoke on "Dangers of X-Rays and Small Versus Large Doses in Deep X-Ray Therapy," respectively; Dr. Richard Kovacs, New York, on "Physical Therapy in Chronic Poliomyelitis," and Dr. William H. Schmidt, Philadelphia, on "Surgical Uses of High Frequency Currents"; Dr. Morris Fishbein, editor, The Journal, and Dr. Wendell C. Phillips, New York, President-Elect of the American Medical Association, spoke on "The Council on Physical Therapy."

Congress on Internal Medicine.—The tenth annual congress on internal medicine will be held at Detroit and Ann Arbor, Mich., February 22-27. It will be devoted to bedside and clinical laboratory demonstrations as well as to symposiums on modern phases of internal medicine. Prominent places on the program have been accepted by physicians from abroad, Canada and the United States, and all physicians interested in internal medicine who are in good standing in their local and national medical societies are cordially invited to attend. Four days will be devoted to the work at Detroit, and on one day the congress will be the guest of the University of Michigan at the new 1,100 bed University Hospital, Ann Arbor. Information can be obtained from the secretary-general, Dr. Frank Smithies, 920 North Michigan Avenue, Chicago. Headquarters will be at the Book-Cadillac Hotel, Detroit.

Disease in the Aggregate.—In the annual tabulation of communicable diseases prepared by the United States Public Health Service for 1924, the total number of cases reported by the states, insular possessions and the District of Columbia was as given below. In some instances, comparatively large numbers of cases of disease reported in certain states may be due to the system of reporting rather than to unusual prevalence of the disease.

Chickenpox	202,081
Diphtheria	119,831
Measles	511,305
Mumps	125,354
Pneumonia	108,700
Scarlet fever	184,738
Smallpox	56,488
Typhoid	34,825
Whooping cough	164,050
Poliomyelitis	5,199
Pellagra	8,860
Influenza	20,147

Report of Carnegie Corporation.—The annual report of the president of the Carnegie Corporation, New York, for the fiscal year shows that among the grants made during the last few years are $1,000,000 to the Columbia University and the Presbyterian Hospital of New York building; of $2,000,000 to Johns Hopkins University Medical School, Baltimore, for an outpatient building, and a diagnostic clinic; of $1,550,000 to the New York Academy of Medicine building; of $1,500,000 to Vanderbilt University Medical School, and of $704,000 to the Food Research Institute at Stanford University, Calif. In some cases these grants represent support accorded over a period of years; among the more important grants made during the current year are a supplementary appropriation of $550,000 for the building of the New York Academy of Medicine; $50,000 to the Meharry Medical College; $47,000 to the Institute of Educational Research of Teachers College for the study of psychology of adult education; $40,000 to the Association of American Medical Colleges for the study of medical education, and $15,000 to the Potter Metabolic Institute of Santa Barbara, Calif., for research in the production of insulin.

National Committee for the Prevention of Blindness.—At the annual meeting of this committee, New York, Nov. 30-Dec. 5, 1925, Dr. William H. Wilmer, Johns Hopkins University, Baltimore, pointed out that activities carried on in the life history of the committee were responsible for decreasing about 50 per cent the birth infections causing blindness. Following Dr. Wilmer's address, a resolution was adopted on trachoma among the American Indians, which was as follows:

> WHEREAS, Recent studies of health conditions among our 300,000 American Indian wards disclose an appalling prevalence of trachoma with its inevitable damage of vision and ultimate sequelae of blindness; and
>
> WHEREAS, Reports recently made public by governmental agencies charged with guardianship of these 300,000 Indian wards, confirmed also by many sincere friends of the American Indians, show that provisions are now made for a totally inadequate staff of highly trained persons to cope with the ravages of trachoma in the 30,000 cases reported by the Indian agents; and
>
> WHEREAS, The Secretary of the Interior and the Commissioner of Indian Affairs are greatly handicapped in their sincere efforts in behalf of the health and welfare of these 30,000 afflicted Indians, both by shortage of skilled personnel and shortage of funds; therefore, be it
>
> *Resolved,* That the National Committee for the Prevention of Blindness, in annual meeting assembled, and representing upward of 14,500 persons, who by annual contributions in memberships or by donations, support every hopeful effort in lessening blindness, respectfully urge on Congress such increased financial support and additional legislation as may be required to more quickly alleviate the suffering and ravages of trachoma and minimize its incidence and to better cooperate with all social agencies in a position to help with this promising work so well begun by the Secretary of the Interior and his Commissioner of Indian Affairs.

Post-Graduate Association of North America.—The next tour of the Inter-State Post-Graduate Association of North America will start a few days after the Dallas meeting of the American Medical Association, and the party will reach Cherbourg, France, May 7; Rome, May 14; Florence, May 21; Venice, May 25; Munich, June 4; Prague, June 11; Berlin, June 15; Amsterdam, June 19; Brussels, June 24, and in the meantime visit other medical centers, sailing from Antwerp for home, June 26. The party goes abroad on invitation from the leading medical universities of the countries to be visited; it will be limited to 500 members, including physicians' families and friends. The invitation is extended to all physicians of North America who are in good standing in their state or provincial society. The most eminent clinicians and teachers in these foreign centers will have charge of the program of the assembly, covering every branch of medical science. For those who desire to stay longer, three return sailing dates have been arranged. Dr. William J. Mayo, Rochester, Minn., is president of clinics; Dr. Charles H. Mayo, general chairman of the foreign assemblies, and Dr. George W. Crile, Cleveland, chairman of the program committee. The privileges of the tour will be protected by issuing an admittance card to insure that the applicant is in good standing in his state medical society. Reservations should be made early by sending the reservation fee of $65 for each person to Dr. William B. Peck, managing director, Freeport, Ill.; if for any reason the applicant cannot attend the assembly, the money will be refunded immediately if the request is made as early as six weeks before sailing time. The price for the main tour entire with high grade, first class hotels and first class rail is $1,450; for medium grade, first class hotels and second class rail, $1,185. For medium grade first class hotels and second class rail, the price is $830, provided the member sails home, June 5, at the end of the visit to Italy and Switzerland, by way of Cherbourg.

New County Society Presidents.—The following physicians have recently been elected president of the county medical society indicated:

Dr. Waite Adair, Lorain, Ohio, Lorain County Medical Society.
Dr. Carl Baker, Herrin, Ill., Williamson County Medical Society.
Dr. Harold de Blois Barss, Ypsilanti, Mich., Washtenaw County Medical Society.
Dr. James D. Carey, Fort Collins, Colo., Larimer County Medical Society.
Dr. Lewis Carthrae, Jr., Corder, Mo., Lafayette County Medical Society.
Dr. Frank L. Chenault, Albany, Ala., Morgan County Medical Society.
Dr. Sam T. Cousins, Wetumpka, Ala., Elmore County Medical Society.
Dr. Edward R. Cunniffe, New York, Bronx County Medical Society.
Dr. Nathaniel C. Daniel, Oxford, N. C., Granville County Medical Society.
Dr. Maxwell J. Davis, Mansfield, Ohio, Richland County Medical Society.
Dr. John B. Frisbee, Butte, Mont., Silver Bow County Medical Society.
Dr. Arthur M. Gregg, Joplin, Mo., Jasper County Medical Society.
Dr. James W. Hale, Waco, Texas, McLennan County Medical Society.
Dr. Clinton E. Harris, Woodmen, Colo., El Paso County Medical Society.
Dr. Isaac J. Hoover, Owensboro, Ky., Daviess County Medical Society.
Dr. Olin B. Howell, Jackson, Ga., Butts County Medical Society.
Dr. David L. Jones, Fulton, Ky., Fulton County Medical Society.
Dr. Forrest E. Keeling, Portland, Ind., Jay County Medical Society.
Dr. Benjamin H. King, Granite City, Ill., Madison County Medical Society.
Dr. Oscar P. Klotz, Findlay, Ohio, Hancock County Medical Society.
Dr. Thomas J. McCamant, El Paso, Texas, El Paso County Medical Society.
Dr. Joseph B. McKnight, Sanatorium, Texas, Tom Green County Medical Society.
Dr. Ardsley H. McLaughlin, Aurora, Ill., Kane County Medical Society.
Dr. Josephine Milligan, Jacksonville, Ill., Morgan County Medical Society.
Dr. William Moershel, Homestead, Iowa, Iowa County Medical Society.
Dr. Thomas H. Pope, Newberry, S. C., Newberry County Medical Society.
Dr. Timothy C. Quigley, Owatonna, Minn., Steele County Medical Society.
Dr. Claude C. Rayl, Decatur, Ind., Adams County Medical Society.
Dr. John M. Rees, Cynthiana, Ky., Harrison County Medical Society.
Dr. William W. Rucks, Oklahoma, Okla., Oklahoma County Medical Society.
Dr. William E. Schowengerdt, Champaign, Ill., Champaign County Medical Society.
Dr. Louis C. Skinner, Greenville, N. C., Pitt County Medical Society.
Dr. Solomon E. Spratt, Mount Sterling, Ky., Montgomery County Medical Society.
Dr. Charles J. Wehr, Bellevue, Ohio, Sandusky County Medical Society.
Dr. Clayton S. Whitehead, Naperville, Ill., Du Page County Medical Society.
Dr. Robert J. Woods, Smithville, Mo., Clay County Medical Society.
Dr. Charles B. Yost, Bloomsburg, Pa., Columbia County Medical Society.

News of Epidemics.—There has been an epidemic of trachoma in the Noble County schools in Oklahoma. Pupils from Long Branch, Daley and Otoe were required to present health certificates before attending school as were the Indian students.——An epidemic of measles was present in Cloverdale township, Ind., Dec. 18, 1925, and twenty-five pupils were prevented from attending school on account of that disease.——There were twenty-eight cases of chickenpox in Topeka, Kan., Dec. 8, 1925, at which time the health officer declared it had reached the epidemic stage.——Diphtheria was said to be more prevalent in Milwaukee, Dec. 19, 1925, than at any time in the last five years; there were eighty-one cases under quarantine on that date, and there had been two deaths in the previous week.——Gary, Ind., had just recovered from an epidemic of chickenpox when epidemics of scarlet fever and diphtheria occurred. There were thirty cases of scarlet fever reported in December, 1925, and sixteen cases of diphtheria, whereas, during all of November, there were only eight cases of diphtheria in the city.——The Ralston schools, Washington, were closed Dec. 19, 1925, on account of an outbreak of scarlet fever.——Six cases of smallpox developed in the St. Francis Indian Mission school, Rosebud. The school was reported closed, Dec. 17, 1925.——Thirteen new cases of diphtheria developed in Fond du Lac, Wis., the week of Dec. 9, 1925, when the city physician, Dr. Arthur C. Dana, issued a warning and instructions about preventive measures.——Syracuse, N. Y., had an epidemic of whooping cough in which there had been fifty-nine cases reported in December, 1925, up to the ninth, making a total of 393 for the year and twelve deaths.——The measles epidemic in Cleveland increased by seventy-five cases, and there were two deaths over the week end of Dec. 20, 1925.——New Philadelphia, Ohio, had thirty-four cases of smallpox under quarantine, Dec. 11, 1925; fifty-two cases were reported in November.

FOREIGN

Automobile Fatalities in France.—A French exchange quotes the official statistics to the effect that in 1924 there were 1,594 deaths in France from automobile accidents, including 484 occupants of the vehicles and 1,142 pedestrians. During the first five months of 1925 the total has been 779, including 269 occupants of the vehicles.

The Beriberi Question.—An expert on health conditions in the Far East, Dr. van Driel, protests against proposed legislation against polished rice. It would raise the price of rice and rouse the antagonism of rice-growing countries and rice-eating peoples. The efforts should be directed to teaching and making available the use of other foods with the rice.

The Declining Birth Rate.—The *Nederlandsch Tijdschrift voor Geneeskunde* mentions that the birth rate in Amsterdam is now below that of Paris, and Berlin is far behind. Another exchange states that in Stockholm the birth rate has dropped from 26.3 per thousand inhabitants in the ten years ending with 1900 to 12.6 in 1924. The corresponding figures for the death rate are 19.1 in 1900 and 11 in 1924.

Imperial University Library.—The Tokyo Imperial University has completed plans for the new library donated by the Rockefeller Foundation, and construction work will start in the spring. The structure will be Gothic, three stories high and a basement, with thirty-three acres of floor space and five reading rooms, which will accommodate 2,000. The library will eventually be open to the general public.

Prize for Work on Pneumonia.—The *Münchener medizinische Wochenschrift* relates that the L. Rosenthal prize of 1,000 marks is offered for a work on bronchopneumonia in children which represents unmistakable and notable progress in its treatment. The work must be written in German and be received by the director of the university children's clinic, Hamburg, before Nov. 15, 1927.

Centennial of Bordeaux Medical Journal.—The one hundred and second anniversary was celebrated with much ceremony as the official centennial of the *Journal de médecine de Bordeaux*, Nov. 14, 1925, and the twenty-fifth anniversary of Prof. X. Arnozan as editor in chief. Prof. R. Cruchet, noted for his works on aviation, epidemic encephalitis, etc., is general manager, and Dr. Vergely, secretary. Besides the special centennial issue, the number for November 25 contains the addresses and reminiscences of the numerous delegates from scientific societies and others.

Bulletin of Hygiene.—A new monthly journal to be called the *Bulletin of Hygiene* will be published by the Tropical Diseases Bureau, London, England, beginning January, 1926; it will review the more important publications on public health and preventive medicine in English, with particular reference to the needs of the British Empire. Dr. J. F. C. Haslan, late government medical officer of health, British Guiana, recently appointed assistant director of the Bureau of Tropical Diseases, will give most of his time to the *Bulletin of Hygiene*, and will be assisted by about thirty-five contributors, among whom will be Prof. E. Mellanby, diet and deficiency diseases; Dr. M. E. Delafield, disinfection; Prof. E. L. Collis, industrial hygiene, and Dr. S. R. Gloyne, tuberculosis. The *Bulletin* will be illustrated, each number containing about eighty-four pages. Orders may be placed with the Tropical Diseases Bureau, 23 Endsleigh Gardens, London, W. D. 1.

Deaths in Other Countries

Sir John MacAlister, late secretary of the Royal Society of Medicine, founder of the *Library*, formerly president of the Libraries' Association and secretary-treasurer of the International Library Conference in 1897, of great influence in amalgamating various medical societies into the Royal Society of Medicine in 1907 and in the acquisition of the present home of the society, died in London, Dec. 1, 1925, aged 69.——**Dr. J. Bartel**, associate professor of pathology, Vienna, and for many years assistant to Professor Weichselbaum, aged 52.

CORRECTIONS

"Umbilical Hemorrhage Accompanied by Deep Jaundice."—In the article by Dr. Honoria Acosta-Sison on page 1201 (The Journal, Oct. 17, 1925), left hand column, tenth line from the bottom, in the statement "75,000 to 80,000 volts for one minute at a distance of 6 feet," the word "feet" should be changed to "inches."

Health Officer Not a Veterinarian.—The Journal, Dec. 19, 1925, stated that the health officer at St. Petersburg, Fla., is a veterinarian; it should have stated that the chief of the sanitary division of the health department of that city is a veterinarian. Ray H. Davies, M.D., has been reappointed city health officer of St. Petersburg.

Government Services

U. S. Public Health Service

Senior Surg. Claude C. Pierce was directed, recently, to proceed from Chicago to South Haven, Mich., and return, to inspect a British steamer for entry.——Surg. George W. McCoy was directed, recently, to proceed from Washington, D. C., to Goldsboro, N. C., and return, to make a diagnosis in a case of suspected leprosy.——Surg. J. P. Leake was directed to proceed, recently, from Washington, D. C., to Cincinnati via Niagara Falls, to inspect certain lead mills in that district to ascertain the cause of lead poisoning.——Surg. Charles Armstrong has been directed to proceed from Washington, D. C., to Louisville, Ky., for the conference with state and local health officials regarding an epidemic of infantile paralysis.——Surg. Sanders L. Christian has been relieved from duty in London, England, and assigned to duty at Ellis Island, New York.——Surg. R. Eugene Dyer has been directed to proceed from Washington, D. C., to Alexandria and Fairfax Court House, Va., and return, at such times as may be necessary during the fiscal year, in connection with the standardization of scarlet fever streptococcus toxin and antitoxin.——Surg. Walter C. Teufel has been relieved from duty at Quebec, Canada, and directed to proceed to Rosebank, N. Y., for assignment to duty at the U. S. quarantine station.——Surg. Lionel E. Hooper has been directed to proceed from Antwerp, Belgium, to Rotterdam, Netherlands, and return, during the absence of the medical officer at that place, to inspect vessels proceeding to the United States.——Acting Asst. Surg. Frank L. Van Alstine has been directed to proceed from New Orleans to Washington, D. C., and return, to accompany a patient to St. Elizabeth's Hospital.——Asst. Surg. Gen. Samuel B. Grubbs has been directed to proceed to New York, Providence, R. I., Boston and Fall River, Mass., and return, for conferences with officers in charge relative to quarantine and immigration practice at those stations.——Surg. Joseph Goldberger has been directed to proceed from Washington, D. C., to Milledgeville, Ga., and return in connection with pellagra investigations.——P. A. Surg. Kenneth F. Maxcy has been directed to proceed from Montgomery, Ala., to Savannah, Ga., Charleston, S. C., and return in connection with investigations of Brill's disease.——Surg. David J. Prather, United States Public Health Service, has been relieved from duty at Baltimore and assigned to Dublin, Irish Free State, and P. A. Surg. John F. Mahoney has been relieved at Dublin and assigned to duty at Liverpool.——Asst. Surg. William Y. Hollingsworth has been relieved from duty at Ellis Island, N. Y., and assigned to duty at Cobh, Irish Free State.

Army Personals

Major Earl L. Parmenter and Major William T. Weissinger, Capt. Edward D. Sykes, Capt. H. M. Nicholson and Capt. John B. Powers will sail from San Francisco for duty in the Philippine Islands about April 3 and March 12, respectively, and Major William H. Mitchell from New York, about April 22, for duty at Honolulu.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 12, 1925.

Medical Research

At the anniversary meeting of the Royal Society, the retiring president, Sir Charles Sherrington, referred to the generous bequest of $50,000 that was received from an anonymous donor for the promotion of medical research. On the recommendation of the tropical diseases committee of the society, it had been applied to investigating kala-azar. At the instance of the society, Major Patton and Dr. Hindle started for northern China in June last in pursuance of that object. And now the society had received from the same generous source a further munificent bequest of more than $140,000. The society had instituted a further Foulerton professorship, and the new Foulerton professor appointed was A. Vivian Hill, author of many contributions to animal physiology. He had placed the knowledge of muscular contraction on a new footing. Taking up the problem from the point which chemical researches had at that time reached, Professor Hill, by his own experiments, in conjunction with his pupils and others, had carried its study much further, especially in its physical aspects. The technic devised and the lines of analysis pursued had been masterly. Professor Hill was determining decisive factors concerned in the performance and maintenance of the physical efforts, and was tracing physiologic characteristics underlying the skill and endurance of the athlete. Such researches promised information of value in regard to the management of muscular effort and its application on a wholesale scale to industrial labor. They also promised further insight into what might be termed manual skill.

Turning to the question of psychology, Sir Charles Sherrington said that psychology was rapidly growing, as was evident from its enhanced and successful application to practical problems lying before it in the sphere of industrial management and conditions of labor. Psychology as a part of experimental biology possessed, of course, recognized ties with the physiology and pathology of the nervous system; but on them it no longer explicitly leaned to the extent it did. Its discipline became more intrinsically its own. This was well and of favorable augury for its immediate progress as an experimental science. Concurrently with that tendency in psychology, it was noteworthy that physiologists—Pawlow and his school, and, in this country, Dr. Anrep—were pursuing analyses of complex behavior of the higher animals under systematic avoidance of all reference, even by implication, to such psychic reactions as accompanied that behavior. Their method applied to animal behavior, in wider ambit than heretofore, the principles of reflex action. To illustrate by one example: In his admirable Croonian lecture in this room last June, Professor Magnus described analyses by himself and his colleagues of the pure reflex behavior of the cat without cerebral hemispheres. He showed how, for example, a moving mouse before the eyes of such a cat attitudinizes the whole mechanism of the animal, exciting from it appropriate posture and direction in readiness for the final spring upon its prey. After that, "all the cat has to do is to jump." To jump or not to jump, that becomes the question. At such a point the work of Pawlow and his school dovetails on to the work of Magnus and his school. Pawlow shows how in the intact animal such a final turning point in its train of reactive behavior—for instance, "jump" or "not jump"—can be studied as what is termed a "conditioned reflex"; he shows how that turning point can be examined as outcome of a balance between physiologic impulsions and restraints, dependent partly on conditions under which the act is called for at the moment, partly on conditions under which it has been called for in the past; that is to say, the mutual time relations of the dominant stimuli, and so on. The result is thus treated as a sum of physiogic factors, positive and negative, interacting under physiologic rules, which can be determined, therefore, as obtaining for the cerebral cortex. In this way is pursued a physiologic study of higher nervous functions of the animal brain, without appeal to psychic reactions, of which, indeed, the method affirms nothing and denies nothing.

This line of attack is a gain both for physiology and for psychology, since psychology and physiology, thus treading an essentially common terrain, yet do so each untrammeled by the other and without explicit reference to the eternal psychophysical problem.

Pharmacists Refuse to Cooperate in the Production of a New Edition of the British Pharmacopeia

The old feud between the pharmaceutic chemists and the general medical council has broken out afresh in connection with the new edition of the British pharmacopeia, which is now in the course of preparation. Sir Donald MacAlister, the president of the council, invited the Pharmaceutical Society to serve on two committees with a view of preparing a new edition. On the first of these committees he proposed that there should be three members nominated from the council of the Pharmaceutical Society and three members from the pharmacopeia committee of the general medical council, the chairman of that body to be chairman of the joint committee. He also invited the Pharmaceutical Society to nominate a committee of reference in pharmacy, this committee to consist of the president of the society and a small number of expert pharmacists. Mr. Philip F. Rowsell, president of the Pharmaceutical Society, replied, stating that his council regarded the proposal of the general medical council as unsatisfactory, and considered that it should be represented on the pharmacopeia committee of the general medical council. The Pharmaceutical Society has also written to the privy council (which has control over the general medical council) making three complaints: 1. The intervals between the various editions of the pharmacopeia are too long. 2. In some respects, each edition is out of date when first published. 3. In the intervals between the publication of the various editions, the work performed in its preparation is adequate neither in quantity nor in quality. After drawing attention to the assistance given by the society in the past, it contends that this assistance has not been recognized in the way in which the society feels that it has a claim to expect; namely, by pharmacists being represented on the body responsible to the general medical council for the production of the pharmacopeia. The council informed the privy council that the society is not justified in accepting the invitation of the general medical council to cooperate. It does not consider that there is any legal obstacle in the way of such cooperation, and it invites the privy council to inquire whether any, and, if so, what, alteration of the law is needed "in order to secure the preparation of future editions on a basis which will result in the pharmacopeia suitable to its users, medical and pharmaceutical, throughout the British empire."

Fatal Explosion in a Boy's Mouth During Operation

In a previous letter (THE JOURNAL, Nov. 7, 1925, p. 1499) this curious case of fatal explosion of a mixture of ether vapor and oxygen during a dental operation was reported. The cause of the explosion remained obscure. In a letter to the *British Medical Journal*, a physician makes an important suggestion. At the inquest it was suggested that ignition may have been caused by a flame some 6 feet away. The physician now suggests that ignition may have been caused not by the flame but by the syringe used in the operation. If a platinum needle were in use the conditions would have been especially favorable for producing catalytic action on the surface of the warm platinum, thus leading to ignition of the mixture of ether and oxygen. Even in the absence of platinum some metallic part of the syringe might have acted in a similar manner, nickel, iron and even glass and porcelain being known to possess catalytic activities in a greater or a less degree.

The General Medical Council and the Lay Press

Throughout the lay press there is a flood of criticism and even abuse of the general medical council because of its decisions in several recent disciplinary cases to remove from the register the names of physicians who published articles in lay periodicals for the purpose of attracting patients. One case was reported in a previous letter to The Journal in which the British Medical Association was the complainant. In another case an aged physician was charged with publishing articles on an alleged "consumption cure," sending circular letters to persons not under his charge and endeavoring to induce them to become patients, and endeavoring to induce physicians to use medicaments of whose properties and action they were ignorant, while refusing to disclose to them the formula. In one article, embellished with photographs of the minister of health, the president of the general medical council, and the chief medical officer of the ministry (evidently an attempt to suggest official approval), it was announced that a miraculous remedy for the cure of consumption had been discovered. Sufferers were invited to correspond with *John Bull* (the periodical in which the article appeared), and when they did so were put into communication with the physician. He asked them to forward the names of their medical advisers, through whom the remedy would be applied. But it was added that, in the event of the patient's physician "not being able to administer the remedy," the staff of the advertising physician would arrange for the treatment. In another communication a charge of $10 was intimated. The defense was that what the physician had done was in the interest of humanity and that those who wrote were told to seek the advice of their medical advisers. The formula was kept secret because it was given to the physician in confidence by the discoverer. The council found that the charge had been proved and directed that the name of the physician should be erased from the register.

There can be no difference of opinion that the exploitation of such secret remedies by qualified physicians is a danger to the public, as is the exploitation of nostrums by lay persons, and should be penalized. But there is another kind of medical article which appears in the lay press and—theoretically at any rate—comes under the ban of the general medical council: pronouncements on topics of health which sometimes appear over the signature of well known physicians. The council, however, does not take any notice of them, presumably on the ground that they are in the public interest and not written with any motive of personal gain. However, the lay press argues that anything which appears over the signature of a physician helps to advertise him and that the council shows unfair discrimination in allowing the great ones of the profession to go free while punishing men in humbler positions. In an article on the subject, the *Lancet* regrets that articles on health topics that show the public the directions in which medicine can further help them should be under any ban, and discusses whether the council should draw up rules indicating that certain articles may be published in the lay press over the signature of the writer, while other articles cannot receive similar treatment. The *Lancet* thinks that this could not be done, as charges of partiality would immediately be made, would be difficult to refute, and would endanger the reputation of the council for fearlessness. Therefore the *Lancet* does not believe that any alteration in the practice of the council could meet the dilemma satisfactorily. But our contemporary appears to overlook the fact that in the absence of such rules these very charges are now made. Indeed, it would seem that the existence of such rules, by which every one is called on to abide, would be an answer to the charge of partiality which can be and is much more plausibly made under the present condition in which the council exercises discretion without giving reasons.

PARIS

(From Our Regular Correspondent)

Dec. 14, 1925.

Necrology

Dr. E. Desnos died recently at Pondicherry, during a voyage to India. Early in life, he devoted himself exclusively to urology, in which field he held many offices and won an eminent place. Being ardently fond of work, active and interested in investigation, he wrote a great deal. He published or directed the publication of numerous didactic works, such as the Encyclopédie française d'urologie, in which he was associated with Pousson and many well known collaborators. His Histoire de l'urologie does honor to his memory. In 1896, he founded the Association française d'urologie, and, in 1908, the Association générale, of which he remained the general secretary up to the time of his death. He maintained friendly relations with urologists in foreign countries. His genial personality had won for him many firm friends, so that his death is widely mourned in French medical circles.

The Incidence of Syphilis

Prof. L. Pautrier recently presented a paper on the incidence of syphilis at the Congress on Public Health. The crusade in France against syphilis was begun during the war, but it is only during the last six years that much progress has been made. The culminating point in the spread of syphilis was reached in 1919-1920. Only an inquiry that would include all the hospital services and private practices would determine, with any degree of accuracy, the number of syphilitic persons in the country. In the absence of such documentation, our sole basis for an estimate lies in the statistics on special consultations throughout France. These indicate a 50 per cent decrease in syphilis between 1920 and 1923. Since 1923, the curve has remained horizontal, in the main, though last year there was some indication of an upward trend. This check in progress is due to more or less permanent causes: lack of education of the public; patients failing to consult a physician in due season, and deceptive advertisements of charlatans. Certain temporary causes also have operated: influx of syphilis from foreign countries, as shown by examinations of Polish, Italian, Spanish and Czechoslovakian laborers; and inadequate treatment of syphilis by practitioners, including substitution of the intramuscular route for the intravenous route in the administration of neo-arsphenamines, and the use of bismuth salts without sufficient discrimination. A partial inquiry in neighboring countries reveals that the syphilis curve is much the same as in France. In Belgium, Switzerland, Denmark and Sweden, the maximal incidence was noted in 1919, and was followed by a rapid diminution beginning with 1920—a reduction of from 40 to 50 per cent.

On the whole, progress has been satisfactory. Specific drugs, such as we do not possess in dealing with tuberculosis, cancer or gonorrhea (the incidence of which remains everywhere stationary), are the basis of our success. The fact that, within six years, the incidence of syphilis has been lowered by

50 per cent furnishes proof that the treatment is essentially correct. It would, however, be an error to conclude that six years more will eradicate syphilis. There are signs of newly created foci appearing. He would be a daring prophet who would attempt to assign a precise date for the disappearance of syphilis, but, under the present conditions, it seems not unlikely that that goal may be reached in twenty years or thereabout. In order to bring that to pass, there must be more extended legal help, as well as a new lineup of the forces that are competent to carry the crusade on to a successful finish.

In conclusion, Professor Pautrier made the following recommendations concerning foreign laborers: He has no idea of suggesting vexatious regulations. He would merely require foreign laborers to submit to an examination at the nearest antivenereal station to prove that they were not affected with venereal disease. Such examination could be made the prerequisite for the issuance of a card of identification by the commissioner of police. Reexamination should be required every six months. It would be advisable also to institute surveillance of the large maritime ports, such as Havre and Marseilles, where the disease appears to be on the increase. An examination should be made of the crews of ships as well as of disembarking immigrants. The education of the public in antivenereal prophylaxis is still very inadequate. The prejudice against "shameful diseases" is far from being eradicated. The first task is a lecture campaign: particularly in the universities, the factories, the workshops and the department stores.

Since a campaign of education will induce the public to consult physicians more freely, the number of consultation services should be increased at once; especially prenatal consultation services in the maternity hospitals. In the prisons, too, consultation services and the opportunities for free treatment after examination should be increased. Visiting nurses can ferret out cases, and their services should be utilized more generally in venereal prophylaxis. Special instruction in syphilis should be made obligatory in the medical curriculum and should be covered by a special examination. In view of the difficulties in estimating the number of syphilitics in France, it would be advisable to institute an inquiry throughout the whole country, to which from six months to a year might be devoted.

Malta Fever in France

Aubiant, Dubois, Lafenêtre and Lisbonne called attention at the Congress on Public Health to the recrudescence of Malta fever, from 3,000 to 4,000 cases of which have been observed since 1920 in the region of France bordering on the Mediterranean. These authors have made a detailed inquiry with regard to the distribution of cases in France and as to necessary prophylactic measures. Fourteen departments of France, together with the island of Corsica, representing about one fifth of the area of the country, have been constantly infected since 1920. In five or six other departments there have been a few sporadic cases, and in three further departments cases have been brought in. In the Mediterranean region the disease is derived from sheep perhaps more frequently than from goats. The authors have established that the infection, which has hitherto been believed to be indirect and due to the consumption of milk and cheese of infected sheep and goats, is in reality often of direct origin and due to the close contact of the country population with these animals. For this reason, the authors, taking account of the possible connection of the disease in man with certain epizootics, and more particularly with infectious abortion in sheep and goats, recommend that infectious abortion be added to the list of notifiable diseases as set forth in the law of June 21, 1898 (rural code).

GENEVA

(From Our Regular Correspondent)

Dec. 10, 1925.

Session of Swiss Association Against Tuberculosis

At the fifth scientific session of the Swiss Association Against Tuberculosis, recently held, the subject for discussion was the serologic methods of diagnosis of tuberculosis, with special reference to Besredka's reaction. Dr. Charles Saloz of Geneva, the first speaker, stated that he had employed this reaction in a large number of subjects. Some of these were healthy; others either were suspected of having tuberculosis or actually were tuberculous; still others had syphilis or were convalescent from various diseases. Although he did not agree with Professor Rist of Paris that this reaction is devoid of value, he did not think it of equal value in the diagnosis of tuberculosis with Wassermann's reaction in syphilis. Saloz remarked that in healthy subjects without symptoms of tuberculosis, Besredka's reaction is generally negative, while in cases of confirmed tuberculosis it is positive in about 73 per cent. A negative Besredka reaction does not establish absence of tuberculosis, nor a positive reaction its presence. A positive reaction in the presence of a pleural or peritoneal fluid collection, or hemoptysis, should impel a search for tuberculosis. The intensity of Besredka's reaction varies in different cases as well as in the same patient. It offers no parallelism with the skin reaction. This is not astonishing because the latter symptom is one of allergy, while Besredka's reaction proves the presence of an antibody.

The second paper on this subject was presented by Dr. Wanner of Lausanne. In the discussion following these two papers, Dr. Jaquerod of Lysin remarked on the variations in Besredka's reaction when secondary infections existed, and the absence of the reaction in cases in which the duration of the diseases was so short that antibodies had not had time to form, as in tuberculous meningitis.

Professor Silberschmidt of Zurich said that his results with Besredka's and Wassermann's reactions were in accord with those of Saloz and Wanner. Both of them possess certain value, although at present definite conclusions are not possible.

Dr. Machard of Geneva recorded the late results of the treatment of tuberculous ostearthritis by Mosetig's procedure of iodoform packing, and said that the patients were immobilized in plaster on an average of six weeks.

Dr. Dopper of Lucerne complimented Dr. Machard on his results with this well tried old procedure, which, combined with helio-alpine treatment, shortened the convalescence of tuberculous ostearthritis.

Dr. Burnand referred to the treatment of infectious complications of pneumothorax by oleothorax, devised by Dr. Bernon of Chal in 1921, which had given him brilliant results. In a case of pneumothorax with a pleural exudate which persisted in recurring in spite of several aspirations, he introduced into the pleural cavity, after irrigation with physiologic sodium chloride solution, 20 cc. of 5 per cent gomenol oil and allowed it to remain in order to prevent the exudate from recurring. In this respect, Dr. Maurice Gilbert insisted on the necessity of dividing existing pleural adhesions, especially with the thermocautery, in order to assure collapse of the lung in cases of artificial pneumothorax.

Other papers were read, but space does not permit their mention.

Digestive Tract Disease Due to War Gas

Digestive tract lesions due to gassing during the late war were early or secondary, according to the time of their development or their duration. But a third category of digestive disturbances due to poison gas has been much studied by the French. Months or even years afterward the digestive apparatus may present serious lesions and accidents, usually chronic in character. Loeper has remarked that 7 per cent of dyspepsias or gastritis coming under his observation were due to this toxic factor. Usually they are instances of simple dyspepsia, but some are erosive gastritis with more or less deep ulceration.

Dr. A. Delamare's recent thesis, the conclusions of which follow, gives a good summary of the question: Besides the acute respiratory accidents the asphyxiating gases produced early digestive accidents, whose lesions and symptoms are those of acute gastritis. In most instances recovery ensued, but they may give rise to late accidents and dyspeptic sequelae. Ordinary simple gastritis is usually the result, and persistent gastritis is one of the less common types. But it can lead to chronic morbid changes, the most important of which are hyperchlorhydria, less frequently an ulcer with its secondary accidents, cicatricial complications and cancer. This is of the highest interest, not only from the purely nosological standpoint, but also on account of its importance for computing the amount of pensions, and the practitioner should be cognizant of these late appearing digestive accidents due to gas. As to treatment, there are two principal indications: the cicatrization of the lesions of the gastric mucosa and the improvement of the patient's general health. Diet and treatment are to be prolonged.

Lilliputian Hallucinations

Dr. H. Flournoy, privatdozent at the Faculty of Medicine of Geneva, reports an interesting case of atypical lilliputian hallucinations in a man, at 86, with cataract. His health had been good and visual hallucinations began when sight had considerably diminished. Elementary illusions first occurred —simple entoptic phenomena due to ocular disturbances—in the form of a suddenly appearing image of a luminous fan. But the hallucinations strictly speaking, which occurred daily for six years until the patient's death, are to be attributed to a toxic etiology, although this does not explain either the contents or lilliputian character of the hallucinations. The optic theory is insufficient to account for the conditions observed. Hence some observers suppose that these phenomena are a kind of return or a retrogression to minute conceptions of a child's imagination. In Flournoy's case two very special and exceptional characters of the lilliputian hallucinations seem to confirm this hypothesis. The patient would take in his hand small personages or animals that he thought he saw; he even could feel them and passed some time in examining them as a child would its toys. He would give them orders and himself would contribute to their creation by moving into space minute masses or molecules which he supposed contained the germs of new beings. There is, perhaps, here a psychologic complex at the basis of the symbolic hallucinations of birth that this patient likewise presented very distinctly, although infrequently.

The Gasserian Syndrome

Pain due to pathologic change in the gasserian ganglion offers a typical symptomatology, as recently pointed out by F. Levy (*Gazette des hôpitaux*, 1925). The syndrome evolves in distinct phases, the first two of which are constant. The first phase consists of pain, which may persist or may endure merely for a few days. The second phase consists of neurologic pains which, when continued, produce a sensation of deep seated weight, occasionally a paresthesia to cold. When the pain is paroxysmal it is like an electric discharge, the attacks at first occurring at distant intervals, finally daily and becoming subintrant. The three branches of the trigeminus are progressively involved, the ophthalmic branch being the first, as is evident by frontal and supra-orbital pain; then the upper and inferior maxillary branches are involved, so that the entire half face is painful. The second phase is characterized by a paralysis partially or entirely involving the sensitive elements of the fifth nerve. Objective sensibility is diminished or occasionally abolished in part or totally on the side of the face affected, and not infrequently the motor branch of the nerve may participate in the paralysis with all its immediate consequences. Muscular atrophy rapidly ensues. Trophic disturbances represent the third phase; they are not constant, nor are they uncommon, consisting of photoprobia or neuroparalytic keratitis. If the eyeball is not properly protected, the process will end in exfoliation, suppuration and perforation of the cornea, hernia of the iris or panophthalmia. A dry, squamous state of the skin, dental caries, atrophic rhinitis and herpetiform eruptions are other clinical occurrences. The gasserian syndrome is frequently associated with paralysis of the cranial nerves, especially the motor nerves of the eye, peripheral paralysis of the facial type, edema of the papilla and optic neuritis.

The acute and subacute gasserian syndromes usually are dependent on inflammatory lesions, and when accompanied by fever and meningeal phenomena are very serious, usually culminating in death. If due to a neoplasm, the chronic syndrome progressively leads to the patient's death.

To be of any use, treatment must be dependent on exact diagnosis. If due to an osteitis of the petrous portion of the temporal bone the ganglion had better be removed, especially when the syndrome is very marked and complicated by symptoms of meningitis or the onset of thrombosis of the cavernous sinus. In syphilitic patients, modern intensive treatment of syphilis is to be carried out. Injections of alcohol for relief of pain are to be discarded. Retrogasserian neurotomy is to be recommended in both essential and symptomatic neuralgia of the gasserian ganglion; but unless the pain is too severe, it is wise to postpone operation, because not infrequently the pain disappears when other disturbances of objective sensibility develop.

PRAGUE

(From Our Regular Correspondent)

Dec. 4, 1925.

Sickness Insurance for Public Officials

The law concerning sickness insurance for public officials was passed by parliament, Oct. 15, 1925. The law applies to all public officials, including teachers of elementary schools. The benefits include free medical service, assistance at childbirth, free medicine and therapeutic appliances, and free treatment of the members of the family of the insured. Public officials, in case of sickness, receive their regular income for a year, after which time they receive a pension, if the sickness continues. Necessary transportation of the sick is paid for by the insurance. The treatment is understood to comprise that given by a general practitioner, by a specialist or in institutions. Patients are free to choose their own doctors from a list of insurance physicians. Elsewhere, the prevalent system in insurance associations is to have all patients seek the advice of some one contract physician, whether they like him or not. In such a system, physicians have no incentive to maintain a high standard. Insurance associations have been defending themselves against the scheme in force in Czechoslovakia because the cost is somewhat higher and the management more difficult. The insurance is to be administered by a committee of five formed in each political district. The chief of the political administration of the district is to be the president of the committee, the remaining four members being elected by the insured. The insurance premiums are to be 2 per cent of the salary of the insured.

This law is the final one in the system of sickness insurance in Czechoslovakia. Sickness insurance of independent wage earners is optional. Private practice in Czechoslovakia in the future will be confined to the very rich who did not enter the sickness insurance scheme and to those who seek a private physician because they are not satisfied with the service given to them by the insurance practitioner.

Cancer Association

The Association for the Study and Combating of Cancer in the Czechoslovak Republic has added a new function. It has opened a station for biopsy of malignant and suspicious growths where specimens may be examined free for health officers, dispensaries, hospitals and even private practitioners in cases of patients who are unable to pay for the examination. The station is in the hands of Prof. R. Kimla. Physicians are urged to send not only those specimens on the examination of which depend the operative procedures to be adopted, but also specimens from persons in whose cases conservative methods are being employed. Histologic examination is desirable because certain tumors require a certain dosage of radium or roentgen rays which in other cases might have a harmful effect. Histologic examination is also necessary if cure of a malignant growth is claimed and if recurrences are to be avoided. The association hopes to stimulate the interest of physicians in the campaign against malignant growths and to put the measures against them on a scientific basis. Since the station is connected with the university, it will have a supply of material for didactic purposes.

Pharmaceutic Specialties

Pharmaceutic specialties cannot be classed with "patent medicines" because their composition must be given on the container; but the way they are being sold gives them a resemblance to quack remedies. Before a pharmaceutic preparation can be put on the market, approval of the remedy by the state health council is necessary. The application for approval is accompanied by a detailed description of the composition of the remedy and the certificate of a registered practitioner that he has controlled in his practice the effects of the remedy. This cumbersome procedure is being adhered to for pharmaceutic preparations that are manufactured in the country. The flood of imported remedies is such that the state administration cannot control whether a specialty is being sold legally or illegally. The function of regulation is to be vested in the drug control division of the state institute of hygiene. In the meantime, efforts are being made by the medical organizations to bring order into the trade. The price paid by a private patient for such a remedy is high because he has to pay not only for the remedy but also for advertising and distribution. Some of the firms have even proposed to practitioners a remuneration for prescribing their preparations. Lately a list of reputable pharmaceutic preparations has been issued in which the name, composition, indications, form of administration, price and producer are given for each preparation. The commercial advertising of the firms was confined to pages printed on colored paper, so that the official text of the booklet gives only the facts about the preparation.

Institute of Hygiene

The state institute of hygiene in Prague, which is being built in cooperation between the Czechoslovak government and the International Health Board of the Rockefeller Foundation, was opened, November 5. The first four divisions of the institute have been put into operation. The first division produces serums and bacterial vaccines; the second, smallpox vaccine; the third is for antirabies treatment, and the fourth is a bacteriologic service laboratory. The rest of the institute, comprising five more divisions, is to be completed within the next three years. Prof. Pavel Kucera, who has been in charge of the construction of the institute, has been appointed acting director. Professor Kucera is a graduate of the Czech Prague Medical Faculty; he obtained his medical degree in 1897. Since then he has had wide and long experience in pathology, epidemiology and hygiene.

Physicians' Study Tour

The Young Generation of the Czechoslovak Physicians recently organized a study trip to Switzerland and France, in which 120 members participated. In Switzerland, the famous climatic resorts of Davos and Leysin were visited and the group was given a reception at the headquarters of the health section of the League of Nations in Geneva. They were received in Paris at the Sorbonne by the dean of the medical faculty, Professor Roger. The head of the group, Dr. C. Amerling, delivered a lecture on "Purkinje and Claude Bernard," in the Collège de France. Dr. Amerling demonstrated the analogy between the Czech and French methods of scientific investigation. On this occasion a Czecho-French medical society was formed for the interchange of ideas in medicine.

BERLIN

(From Our Regular Correspondent)

Nov. 21, 1925.

Heart Diagnosis by Means of Electrical Auscultation

Some time ago, Dr. Leo Jacobsohn of Berlin reported a method of electrical amplification of the heart sounds in man, so that they may be heard by persons even at great distances. As amplifiers, the same cathode tubes were used that are employed in radio apparatus. The radio station at Berlin has transmitted heart sounds 850 kilometers. The subject was in the reception room of the transmitting station, and Swiss physicians at Davos were able to distinguish clearly the rhythm of the heart, but not the more delicate heart sounds. A few days ago, Dr. Jacobsohn demonstrated an American improvement of the procedure. The method makes use of the tone filters described by Geheimrat Wagner, and which already play an important part in modern telephony. They separate several conversations that pass over the same wire at the same time. The filters let through certain tones for which they are keyed, while other tones that are not desired are "cut out" or held in check. For example, if, in the presence of a valvular defect, there is a soft heart tone and a loud murmur that obscures or drowns the heart tone, the heart tone can be amplified and the murmur partially suppressed. The apparatus renders the heart tones audible in a good-sized room. The receiving instrument is placed on the chest wall. At the demonstration, each of the participants was able, with the aid of the small telephone at his seat and the receiver, to hear the heart sounds of the various subjects. Therein lies the importance of the discovery for the purposes of instruction.

Dr. Jacobsohn demonstrated also an electrical audiometer, by means of which the examining physician is able to test the power of hearing in each ear. The sounds that are brought to the ear of the examinee through a telephone can be gradually weakened through applied resistance. The examinee presses a button which lights a bulb when the sound ceases to be audible to him. The loss of hearing, or the degree of hardness of hearing, is recorded on a graduated percentaged scale.

Industrial Accidents and Fatal Disasters in Prussia

Fairly reliable statistics are available with reference to notifiable industrial accidents, although many accidents of ordinary occurrence go unrecorded. Also the records of fatal disasters are reasonably accurate, as presented annually by the Prussian bureau of statistics. The number of accidents occurring in 100 industrial establishments has dropped from 111 in 1913 to eighty in 1924. In 1913, there were fifty-four accidents to 1,000 workmen, and in 1924 the number was decreased to forty-five. In 1913, there was one fatal accident recorded for every 150 industrial establishments and for every 2,000 workmen, whereas, in 1924, there was a fatal accident for every 300 establishments and for every 4,000 workmen. This marked betterment is due mainly to improvements in the safety devices on machines, the education of the workmen through instruction in the avoidance of accidents, and the better preparations for first aid.

On the other hand, a comparison of the years 1913 and 1923 shows no decrease in the number of fatal disasters in general but rather a slight increase. In 1913, there were 40.56 fatal disasters per hundred thousand of population, and, in 1923, there were 40.7. There was an increase in the 1-5 and in the 5-15 age-groups, the most important groups from the political and economic standpoints. There has been an increase in the number of fatalities from drowning. The proportion of fatal accidents caused by driven automobiles was, in 1913, 13.2 per cent; in 1922, 19.6 per cent, and, in 1923, 27.6 per cent, which denotes 100 per cent increase. It will be seen, therefore, that, while the accidents in industrial establishments in Prussia have decreased, there has been no reduction in the total number of fatal disasters in general.

Death of Professor Kirchner

Prof. Martin Kirchner died suddenly in Berlin, Nov. 11, 1925. Kirchner was called in 1896 as an assistant in the medical department of the ministry of public instruction. In 1898 he became medical counselor and in 1911 ministerial director of the medical department, now associated with the ministry of the interior. July 1, 1919, Kirchner was retired, at his own request. During the twenty-three years that Kirchner was connected with the Prussian department of medicine, he exerted a decisive influence on the public health service of Prussia. His chief service was the creation of a modern system for combating epidemics. He was influential in the preparation of the *Reichsseuchengesetz* (law pertaining to epidemics) enacted in 1900. The Prussian law pertaining to epidemics (*Landesseuchengesetz*), which was introduced in 1905, was mainly his work. It became his constant endeavor to improve this act. He established numerous bureaus for medical examination, as an aid to the health officers in combating epidemics. He was especially active also in the crusade against tuberculosis. In 1911, when he became the first medical man to occupy the position of director of the department of medicine, he applied himself to improving the training of physicians, the securing of better salaries for state health officers, the furtherance of school hygiene and especially the care of the teeth. With the outbreak of the war, he introduced measures that insured the immediate readiness of a large number of capable physicians and nurses for the attendance and care of the wounded. Kirchner was able to note that, during and after the war, Germany prevented the spread of any epidemics of importance. Even after his retirement, Kirchner delivered lectures and wrote scientific articles to promote the cause of public health.

Marriages

Herman L. Horwitz, Chicago, to Miss Rose Suzanne Mishlove of Ripon, Wis., Nov. 12, 1925.

Rudolph Goldberg, New York, to Miss Ann Leven of Newark, N. J., Nov. 21, 1925.

Haviland Carr to Miss Ordella Manson, both of Covington, Ky., Nov. 28, 1925.

George Schoenholtz to Miss Jean Greenfield, both of New York, Nov. 13, 1925.

Deaths

Samuel Lewis Ziegler ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1885; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Ophthalmological Society, the Pan-American Medical Congress, 1893, the International Ophthalmological Congress, Edinburgh, 1894, Utrecht, 1899, Lucerne, 1904, Naples, 1909, the International Medical Congress, Paris, 1900, London, 1913; formerly director of public health and charities; member of the permanent committee on comprehensive plans of Philadelphia; at one time on the staffs of the Germantown, the Episcopal and St. Joseph's Hospitals; attending surgeon and executive medical officer of the Wills Eye Hospital; aged 64; died, January 4, of pneumonia.

John Taylor Bottomley ⊕ Boston; Medical School of Harvard University, Boston, 1894; member of the American Surgical Association, the Boston Surgical Association, the American Society of Clinical Surgeons, and the New England Surgical Society; assistant in surgery at his alma mater, 1901-1903; associate in surgery, Harvard University Graduate School of Medicine; surgeon in chief at the Carney Hospital since 1910; consulting surgeon to the Haverhill (Mass.) City Hospital; Spanish-American War veteran; aged 56; died, Dec. 17, 1925, of heart disease.

Edward J. Eberle, Brooklyn; Kentucky School of Medicine, Louisville, 1898; member of the Medical Society of the State of New York; and the Brooklyn Ophthalmological Society; formerly member of the board of health; on the staff of the Brooklyn Eye and Ear Hospital; aged 59; died, Dec. 18, 1925.

Dolphus Edward Compere, Dallas, Texas; Baylor University College of Medicine, Dallas, 1909; served in the M. C., U. S. Army, during the World War; aged 39; died, Dec. 11, 1925, at Hot Springs National Park, Ark., following an operation.

Peyton Eli Cromer ⊕ Springfield, Ohio; Medical Department of the University of Wooster, Cleveland, 1892; aged 65; died, Dec. 11, 1925, at the City Hospital, of injuries received when the automobile in which he was driving was struck by a train.

Edmund J. Wunderlich, Louisville, Ky.; Cleveland University of Medicine and Surgery, 1882; formerly emeritus professor of pediatrics, Southwestern Homeopathic Medical College and Hospital, Louisville; aged 71; died, Dec. 10, 1925.

Ferdinand William Wiehe ⊕ Captain, U. S. Army, retired, Denver; Ohio State University College of Medicine, Columbus, 1915; served in the M. C., U. S. Army, during the World War; aged 33; died, in December, 1925, of tuberculosis.

Edwin De Witt Cronk, Winfield, Md.; University of Maryland School of Medicine, Baltimore, 1884; member of the Medical and Chirurgical Faculty of Maryland; aged 64; died, Dec. 10, 1925, of heart disease.

Marcus Leonidas Brown, Brownwood, Texas; Memphis (Tenn.) Hospital Medical College, 1889; member of the State Medical Association of Texas; aged 58; died, Dec. 2, 1925, at a hospital in Dallas.

Joseph Johnson Gordon, Detroit; Medical Department of the University of Wooster, Cleveland, 1888; member of the Michigan State Medical Society; aged 59; died, Dec. 16, 1925, of heart disease.

George Vickery Foster ⊕ New York; Dartmouth Medical School, Hanover, N. H., 1882; attending physician to St. Andrew's Convalescent Hospital; aged 65; died, Dec. 16, 1925, at Boston.

Benjamin B. Sayle, Coffeeville, Miss.; Louisville (Ky.) Medical College, 1881; member of the Mississippi State Medical Association; bank president; aged 67; died, in December, 1925.

James A. C. Rodgerson, Hunters River, Prince Edward Island, Canada; Dalhousie University Faculty of Medicine, Halifax, N. S., 1900; died, Oct. 16, 1925, of hemorrhage.

Howard E. Felton ⊕ Cartersville, Ga.; Atlanta Medical College, 1893; health officer of Cartersville; veteran of the Spanish-American War; aged 56; died, Dec. 11, 1925, at Rome.

Jonathan Ackerman Coles ⊕ Scotch Plains, N. J.; Medical Department of Columbia College, New York, 1868; collector of rare manuscripts and bronzes; aged 82; died, Dec. 16, 1925.

Thomas H. Woolsey, Greeneville, Tenn.; University of Tennessee College of Medicine, Memphis, 1900; aged 55; died, Dec. 7, 1925, of acute articular rheumatism.

Edward R. Pennington, Owensboro, Ky.; University of Louisville School of Medicine, 1875; Confederate veteran; aged 82; died, Dec. 14, 1925, at Evansville, Ind.

Charles Walter Burns, Lucky Lake, Sask., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1916; aged 42; died recently, at a hospital in Saskatoon.

Charles Henry Winterer ⊕ St. Louis; National University of Arts and Sciences Medical Department, St. Louis, 1918; aged 32; was shot and killed, Dec. 9, 1925.

James Paul Irvine Clancy, Semans, Sask., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1908; died recently, of a poison taken accidentally.

Samuel Wilson McEwan ⊕ Lieutenant, U. S. Navy, Cincinnati; University of Minnesota Medical School, Minneapolis, 1910; aged 40; died, Dec. 10, 1925.

Michael F. Riordan, Fulton, N. Y.; State University of Iowa College of Medicine, Iowa City, 1874; aged 73; died, Dec. 10, 1925, following a long illness.

Pellie Green Graves ⊕ Scottsville, Ky.; Vanderbilt University Medical Department, Nashville, Tenn., 1915; aged 52; died, Dec. 15, 1925, at Nashville.

Lowell M. Jones, Portland, Ore.; Willamette University Medical Department, Salem, 1897; aged 55; died, Dec. 4, 1925, following a long illness.

Joseph Christian Roth ⊕ Syracuse, N. Y.; Medical Department of the University of the City of New York, 1886; aged 60; died, Dec. 19, 1925.

Ulysses N. Thornton, Leland, Ill.; Trinity Medical College, Toronto, Ont., Canada, 1887; aged 60; died, Dec. 13, 1925, of cerebral hemorrhage.

John Frank Robertson ⊕ Indianapolis; Medical College of Indiana, Indianapolis, 1895; formerly county coroner; aged 59; died, Dec. 12, 1925.

James W. Taylor, Luthersville, Ga.; Atlanta Medical College, 1875; formerly member of the state legislature; aged 93; died, Dec. 15, 1925.

Howard Morgan Smith, Palmetto, Fla.; Atlanta (Ga.) Medical College, 1895; aged 54; died, Dec. 14, 1925, at a sanatorium in Atlanta.

Sherman Tecum Davis, Anderson, Ind.; Willamette University Medical Department, Salem, Ore., 1885; aged 62; died, Oct. 22, 1925.

Channing B. Kimball, West Liberty, Iowa; State University of Iowa College of Medicine, Iowa City, 1874; died, Dec. 26, 1925, of uremia.

Charles W. Prettyman, Chicago; Medical Department of Columbia College, New York, 1888; aged 72; died, Dec. 16, 1925, of carcinoma.

William Oliver Henderson Ross, Cincinnati; Eclectic Medical Institute, Cincinnati, 1904; aged 46; died, Dec. 6, 1925, of heart disease.

Willett William Whitehead, Mount Holly, N. J.; Hahnemann Medical College of Philadelphia, 1881; aged 65; died, Dec. 15, 1925.

Reuben Woods, Quincy, Ill.; Bellevue Hospital Medical College, New York, 1866; Civil War veteran; aged 89; died, Dec. 9, 1925.

Henry W. Chapman ⊕ White Hall, Ill.; St. Louis Medical College, 1877; aged 75; died, Dec. 13, 1925, of cerebral hemorrhage.

James E. Roles ⊕ Union, W. Va.; Medical College of Virginia, Richmond, 1897; aged 52; died, Dec. 10, 1925, at Richmond.

Henry C. Leonard, Santa Ana, Calif.; Hahnemann Medical College of Philadelphia, 1878; aged 76; died, in December, 1925.

William W. Shirey, Houston, Texas; Memphis Hospital Medical College, 1903; aged 52; died, Nov. 16, 1925, at Dallas.

Rebecca Weeks Wiley, Laconia, N. H.; Boston University School of Medicine, 1882; aged 78; died, in December, 1925.

Samuel W. Radcliffe, Moose Jaw, Sask.; University of Toronto Faculty of Medicine, 1897; aged 58; died recently.

Elbert Lu Verne Fish, West Valley, N. Y. (licensed, New York, year unknown); aged 72; died, Dec. 6, 1925.

Josephus Younger, Bowie, Texas; St. Louis Medical College, 1879; aged 78; died, Nov. 26, 1925.

W. L. Hines, Warsaw, Ind.; Fort Wayne College of Medicine, 1892; aged 59; died, Oct. 29, 1925.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

TREPOL AND NEOTREPOL NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. Puckner, Secretary.

Trepol and Neotrepol are bismuth preparations for use in the treatment of syphilis. They are manufactured by the Laboratories Chenal & Douilhet, Paris, and marketed in the United States by the Anglo-French Drug Co., New York.

Trepol: This is offered in the form of ampules stated to contain from 3 cc. to 4 cc. of a mixture having 0.1 Gm. of basic tartrobismuthate of potassium and sodium in each cubic centimeter, suspended in arachis oil. According to the French manufacturer, the "Basic tartrobismuthate of potassium and sodium" has the following chemical formula: $CO_2Na.CHOH.CH(OBiO).CO_2K.4(BiO_2H)$. The product should, therefore, contain bismuth (Bi) 74.44 per cent, potassium (K) 2.79 per cent, and sodium (Na) 1.65 per cent.

A specimen of the "tartrobismuthate of potassium and sodium" which is stated to be contained in Trepol ampules was obtained through the American agent from the Laboratories Chenal & Douilhet, and submitted to the A. M. A. Chemical Laboratory for analysis. A study carried out in the Association's Laboratory ("What is the Composition of Bismuth Tartrates Used in The Treatment of Syphilis?" L. E. Warren, Journal A. M. A., April 4, 1925, p. 1067) brought out the fact that, instead of containing amounts of bismuth, potassium and sodium which were in accord with those required by the formula, the product contained 72.69 per cent of bismuth (Bi), but only 0.86 per cent of sodium (Na), and 1.63 per cent of potassium (K). In addition, the product was found to contain 1.51 per cent calcium (Ca), 4.79 per cent of carbon dioxid and 8.15 per cent of water-soluble material, chiefly potassium sodium tartrate. The analysis of Trepol brought out the fact that the product is not potassium sodium bismutho-tartrate, as claimed; moreover, such needless impurities as calcium carbonate and uncombined potassium sodium tartrate were found.

The manufacturer finally admitted to his American agent that the analysis made in the A. M. A. Chemical Laboratory was correct. He held, however, that the composition found by analysis of the specimen furnished by him does not correspond to the composition of the product ordinarily supplied, "which should have the composition corresponding to the published formula."

The agent was informed that his principal had presented no evidence for his statements and that, before his claims in regard to the composition of the product contained in Trepol ampules could be accepted, evidence to support these claims of composition must be submitted in the form of an analysis carried out by him and of specimens which agree with such analysis.

The requested evidence has not been received. The Council is, therefore, obliged to conclude that the product offered the medical profession as "Trepol" does not represent a "tartrobismuthate of potassium and sodium" as claimed, but is, instead, essentially a basic bismuth tartrate. The evidence leads to the further conclusion that the manufacture of "Trepol" has not been carried out under adequate control: hence, the Council declared Trepol ineligible for New and Nonofficial Remedies because its composition is not correctly declared and because no adequate tests are furnished for the control of its identity and uniformity.

Neotrepol: This, too, is supplied in the form of ampules, each stated to contain 2.5 cc. of a suspension of precipitated metallic bismuth in an "isotonic glucose medium."

A specimen of the bismuth metal used in the manufacture of the ampules, supplied by the manufacturer, and specimens of Neotrepol ampules were referred to the A. M. A. Chemical Laboratory for verification of the claimed purity of the bismuth metal and of the composition of the ampules. The following is the report of the Laboratory:

LABORATORY REPORT

"One original specimen of Neotrepol Powder Billault (Laboratories Chenal & Douilhet, Paris) was submitted to the Council on Pharmacy and Chemistry for examination. The product is used for preparing Neotrepol ampules; according to the manufacturer, it consists of precipitated bismuth 'secured by the so-called Boettger reaction (a reduction of salts of bismuth in an alkaline medium'). The metal finely divided thus prepared has a titration (*titrage*) of 96.5 per cent of bismuth.

"Qualitative examination showed the absence of arsenic. A small amount of water-soluble material was present and also particles of 'dust.' The amount of bismuth found in two determinations was 94.51 per cent and 94.43 per cent, respectively. The product contains, therefore, somewhat less than the claimed amount of bismuth, though this discrepancy probably is not serious.

"Original packages of Neotrepol, 'Precipitated Bismuth in Isotonic Solution for Intra-muscular Injection' (Laboratories Chenal & Douilhet, Paris—the Anglo-French Drug Co., New York, Distributor) were submitted to the A. M. A. Chemical Laboratory for examination. The box contained twelve ampules; each ampule contained a black sediment and a clear supernatant liquid. On shaking the contents in the ampules (which also contained two glass beads), a black suspension formed but the bismuth settled out relatively soon; the amount of the contents ('suspension') in the ampules examined was about 2⅓ grams each. The 'Formule' given on the label is

Bismuth precipite	0 gr 10
Serum Isotonique	1 cm.^{3}
pour un centimetre cube	

"Quantitative estimations of bismuth were made on the contents of four ('A,' 'B,' 'C' and 'D') separate ampules:

	Amount Used	Wt. of Bi_2O_3 Obtained	Gm. of Bi per 1 Cc. or 1 Gm. of Suspension
A	2.2470 Gm.	0.1639	0.0654 per Gm.
B	2.3463 Gm.	0.1858	0.0710 per Gm.
C	2.0 cc.	0.1619	0.0726 per cc.
D	2.0 cc.	0.1811	0.0812 per cc.

"It will be noted that the bismuth content of the individual ampules is not constant, varying from approximately 65 per cent to 81 per cent of the amount claimed.

"The contents of one ampule were transferred to a test-tube, and after thorough agitation, the rate of 'settling' noted. After 15 seconds the meniscus was easily seen; after 30 seconds the upper fourth portion of the liquid column was clear and in two minutes the product was well settled. This means almost certainly that the amount of bismuth injected will vary most widely."

The report of the A. M. A. Chemical Laboratory shows that, instead of containing 0.1 Gm. metallic bismuth to each cubic centimeter, four ampules taken at random from a single box contained, respectively, 0.065 Gm., 0.071 Gm., 0.073 Gm., and 0.081 Gm. to each cc., that is, they contained from 65 per cent to 81 per cent of the amount claimed. It is obvious that medication with Neotrepol ampules is inexact. In addition, the bismuth separates from its glucose so rapidly that this separation must contribute still further to indefinite dosage of this potent drug.

The Council declared Neotrepol ineligible for admission to New and Nonofficial Remedies because the amount of active ingredient contained in the ampules is not in accord with the amount declared to be present.

Tuberculosis Mortality in Porto Rico.—The tuberculosis mortality in Porto Rico is high: 204.5 per hundred thousand inhabitants in 1923-1924, against 95 in the United States. The larger towns, where housing conditions among the poor are generally very bad, and those where the tobacco industry constitutes the main occupation of the people, show the highest mortality.—Pastor, J. R.: *Porto Rico Health Rev.* **1**:26 (July) 1925.

Correspondence

"THERAPEUTIC RESULTS WITH CONCENTRATED SCARLET FEVER ANTITOXIN"

To the Editor:—The discussion by Dr. George F. Dick of the paper by the Dicks on "Therapeutic Results with Concentrated Scarlet Fever Antitoxin" (The Journal, Nov. 28, 1925) followed a paper which I presented at the same meeting of the Section on Pharmacology and Therapeutics in Atlantic City last May. My paper has not yet been published and my discussion of Dr. Dick's paper was not included.

In the article entitled "Streptococcus Toxin in Preventive Immunization" (The Journal, Feb. 16, 1924), the Dicks reported typical moderate to severe scarlet fever-like symptoms following injections of large doses of the streptococcus toxin, symptoms exactly like those described by Gabritschewsky in the *Berliner klinische Wochenschrift*, May 6, 1907, after the use of his toxin-vaccine. At that time no other attempt was made by the Dicks to recommend any special dosage, and as I commenced my work with toxin immunization soon after the publication of their article, I took it for granted that we would have to avoid such constitutional reactions if we wished to have permission to carry out this work in the homes, in the public schools and in institutions. I therefore laid stress in my publications on the necessity of avoiding these reactions, and indicated that it would be better to commence with smaller doses and repeat the series of injections, if necessary, rather than arouse unnecessary opposition.

Concerning pseudoreactions, I was glad to note that Dr. Dick has finally accepted my finding that such reactions do come out with the scarlet fever test, although at first he denied their existence. It is probable that in the first series of tests I had made, some of the positive reactors were classified as combined reactors, owing to the fact that the toxin in the control had not been completely destroyed by boiling it for one hour in a water bath. The statement made by the Dicks in The Journal, Feb. 16, 1924, that "tests made with the material heated at 100 and at 90 C. were entirely negative" had completely misled me in regard to the effect of heat on the action of the filtrate.

In my paper at the Atlantic City session I did not state that Gabritschewsky standardized his vaccine according to its toxin content. The subject of standardization was not mentioned. I stated that the vaccine contained from 97 to 98 per cent by volume of toxin-containing broth, which no doubt from the publications of Gabritschewsky is absolutely correct.

It is rather interesting to note that the Dicks are beginning to acknowledge slowly and hesitatingly the priority of the work of Gabritschewsky and his associates on the streptococcus toxin and of Moser on streptococcus antitoxin. The clear cut statements of Savchenko, published in 1905, that he had identified through injections in horses a filtrable streptococcus toxin and produced with the filtrate a definite antitoxic serum, the Dicks still overlook or greatly minimize. This observer did not have the benefit of the knowledge elaborated during the past thirteen years with the Schick test in human beings; otherwise very little doubt remains that he would have applied such knowledge in the identification of the scarlet fever toxin. The toxin has no special pathogenic action on the usual laboratory animals, such as rabbits, guinea-pigs and mice, and it is through the use of such animals that filtrable toxins have heretofore been usually recognized. It is also significant that, in the concentration of the scarlatinal antitoxin the Dicks described and have been issued patent rights to a method used by Banzhaf for many years at the Research Laboratory in the concentration of diphtheria toxin.

A just and fairly complete review of the previous work is given by Dr. Park in his recent article on "Scarlet Fever," which appeared in THE JOURNAL, Oct. 17, 1925.

ABRAHAM ZINGHER, M D, New York.
Assistant Director, Bureau of Laboratories,
New York City Department of Health.

THE BRITANNICA AND OSTEOPATHY

To the Editor:—Your London correspondent (THE JOURNAL, Dec. 12, 1925, p. 1901) complains of the new activities of osteopaths. Referring to a letter from the vice president of the British Osteopathic Association, published in the *Times*, he says that the writer "has the audacity to describe osteopathy as 'a system which has scientifically classified the entire field of mechanicotherapeutics' and refers to the manifesto of his association in which osteopathy is defined as 'that system of the art of healing which regards the structural integrity of the body as the most important single factor in the maintenance of health'"

Perhaps your correspondent is unaware of the part played by the Encyclopaedia Britannica in the "sale" of osteopathy to the British public. The supplementary volumes of the eleventh edition, published in 1922, contain a long article, signed with the initials "G. W. Ri." The writer is George Washington Riley, Ph.B., D.O. A single sentence from the body of this article will serve as a specimen:

> Centuries old is the idea that man is a machine, and that his operations are dependent upon mechanical laws; but to Dr. A T Still is due the honour of recognizing the unity of the body and the law that any derangement of its mechanical structure is followed by disordered functioning or disease, and that the vital mechanism possesses the autoprotective power to restore normality of function, without pharmaceutical, chemical, electrical or any other extraneous and artificial stimulation, as soon as complete alignment and adjustment of such derangements have been made.

Since clear thinking, which is not a characteristic of osteopaths, is essential to lucidity in style, this sentence is, perhaps, the clearest brief résumé of osteopathy by an osteopath extant. Its protagonists, if no others, will encounter little difficulty in its interpretation and application. But what shall we say of great reference works which open their pages to the promoters of pseudomedical systems?

WILLIAM Y. WARD, M.D., Ivanhoe, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request.

PROBLEMS OF DIABETIC METABOLISM

To the Editor.—1. Is depletion of the hepatic glycogen store in insulin hypoglycemia due to the anoxemia attendant on the hypoglycemia? The liver is the main store of glycogen in the body and the sole organ in the body having the functions of endogenous formation of glucose from fat and amino acids The normal hepatic glycogen store contains only as much glucose as would meet the energetic glucose-oxidative requirements of the system for half an hour or so Complete depletion of the hepatic glycogen store, however, is probably normally prevented by a mechanism that brings into play the hepatic function of endogenous glucose formation from fat and amino acids as soon as the hepatic glycogen store commences to become depleted. Thus it is that an animal may be kept for weeks on a diet in which carbohydrate is practically absent without more than a comparatively slight depletion of its hepatic glycogen store, and that a small percentage (from 0.25 to 0 5) of glycogen persistently persists in the liver of an animal rendered glycosuric by excision of the pancreas Endogenous formation of glucose from fat and amino acids is an oxidative process and requires an adequate supply of oxygen to the liver cells In insulin hypoglycemia we have an acute anoxemia which would inhibit this hepatic oxidative endogenous glucose formation In insulin hypoglycemia, therefore, after the glucose stored up as glycogen in the muscles is used up, whatever glucose is used up in the system must come entirely from the hepatic glycogen store, which would therefore undergo a gradually increasing depletion till death.

2. Is there any support among physiologists to the theory that depletion of the hepatic glycogen store below a certain physiologic level stimulates the hepatic cells to endogenous glucose formation from fat and amino-acids, the stimulus to endogenous glucose formation being in proportion to the degree of depletion, and that saturation of the hepatic glycogen store above this physiologic level stimulates the liver cells to endogenous fat formation from the glucose? This theory would explain, for instance, why the hepatic glycogen store of an animal rendered glycosuric by pancreatectomy does not undergo rapid extinction, but that a small trace of glycogen persists in the liver cells for long periods in spite of the glycosuria If this theory were correct, what would occur in a particular case during a period during which no exogenous glucose from the alimentary canal or by transfusion is entering the system, would be that the hepatic glycogen store would not undergo complete extinction, but would undergo depletion until the endogenous glucose formation stimulated by the depletion became equal to the synchronous oxidation of glucose in the tissues and the loss by glycosuria

3 The hepatic cells contain an amylase ferment whose action is reversible; by dehydrolyzing free glucose it stores up glycogen, and by hydrolyzing stored up glycogen it liberates free glucose Being a reversible chemical reaction, the action of this ferment always tends to come to an equilibrium point and in particular conditions of action at a certain concentration of free glucose in the liver cells the two reversible reactions would exactly balance each other The concentration of free glucose in the liver cells always tends to approximate as close as possible the equilibrium concentration and may be therefore taken as equal to it As the blood current comes in very intimate and extensive contact with the liver cells, there is freest diffusion of glucose between the liver cells and the blood If the glucose concentration of the blood coming to the liver were less than the hepatic glucose equilibrium concentration, free glucose formed from glycogen, fat or amino acid would diffuse from the liver cells into the blood stream till the hemic glucose concentration became equal to the hepatic equilibrium concentration, if greater, free glucose would diffuse from the blood stream into the liver cells, to be converted there either into glycogen or fat until the two concentrations became equal. The hepatic glucose equilibrium concentration tends to control therefore the hemic glucose concentration

4 Is it possible that insulin causes hypoglycemia by increasing the speed of the glucose into glycogen reaction and diminishing the speed of the glycogen into glucose reaction of the hepatic amylase ferment, thus lowering the hepatic glucose equilibrium concentration?

SEBASTIAN L RODRIGUEZ, M B B S, Karachi, India.

ANSWER—1. Apparently, depletion of the hepatic glycogen store in insulin hypoglycemia is not due to the anoxemia attendant on the hypoglycemia since hypoglycemia develops before anoxemia, and is the probable cause of it (*Am. J. Physiol* 69:142, 1924). When anoxemia is produced, it undoubtedly acts to increase the formation of blood sugar from the glycogen Mann and McGath (*Am. J. Physiol.* 65:403 [April] 1923) have shown that the presence of the liver is not necessary for the hypoglycemic action of insulin Macleod (*Medicine* 3:222, 1924) thinks that it is due to a stimulation of the glycogenic center by the low blood sugar level He says, "When the blood sugar has declined to a certain level, the glycogenolytic function of this organ becomes stimulated, so that more glucose is discharged into the systemic blood to replace that which has been lost This stimulation occurs through the nervous system, since Burn has found that when ergotamine is given along with insulin to well fed animals the blood sugar curve fails to recover and behaves like that of a starved animal. This alkaloid acts like ergotoxine in paralyzing the endings of the sympathetic (thoracic-autonomic) nerve supply. We must suppose, therefore, that the so-called glycogenic center becomes stimulated when the blood sugar reaches a certain low level."

2 Glucose and glycogen can be manufactured by the liver from protein, amino-acids, etc. Since it is a rule that chemical reactions take place more rapidly in the absence of a retarding product (glycogen and sugar), it is possible that a low glycogen content would stimulate glycogen and consequently sugar formation. We do not know, however, that this occurs, nor do we know that physiologists have expressed an opinion on this point If such a reaction does occur, we might expect some evidence of the reverse condition, but Dudley and Marrian could find no evidence of a conversion of carbohydrate into fat in normal animals under the influence of insulin Studies of the respiratory quotient under insulin give such variable results that they cannot be used in support of the theory

3 It is possible that insulin causes hypoglycemia by increasing the speed of the glucose into glycogen reaction and by diminishing the speed of the glycogen into glucose reaction, thus lowering the hepatic equilibrium concentration, but, it is thought, improbable Insulin in the normal animal causes hypoglycemia and also a lessening of the glycogen content of the liver, and, according to Macleod, insulin lessens glycogen formation In the diabetic patient under certain conditions it not only aids sugar combustion but also causes a storage of glycogen.

4. As to whether insulin diminishes the speed of glycogen into glucose in the normal animal: the reverse is the case. Insulin causes the glycogen stores to become depleted because of the demand for glucose which it sets up (Dudley and Marrian: *Biochem. J.* **17,** 1923). In the diabetic patient, however, insulin apparently reduces the rate of glycogen to glucose, but the action of insulin on this reaction may be indirect. It has no action on glycolysis in vitro.

Since the mechanism of the action of insulin on carbohydrate metabolism is unknown, no theory should be discarded as worthless. We have endeavored to answer these questions on the basis of work already reported. This work may not in all cases be correct.

Macleod, in summing up the effect of insulin on normal animals, states that insulin causes glucose to be converted into some heretofore unrecognized substance, some substance that is not precipitated into glycogen, but which at the same time has lost its reducing properties. It has been suggested that the high respiratory quotients after insulin indicate that a fatlike substance is produced. In this connection it should be noted that Dudley and Marrian did not find the amount of fatty acid in the liver changed in normal mice following insulin.

DIPHTHERIA ANTITOXIN

To the Editor:—In The Journal, Jan. 8, 1921, page 109, Dr. W. H. Park says that a single dose of sufficient quantity is all that is required in any case and seldom in larger doses than 5,000 units for a child, which the table shows is the same treatment carried on in New York now. I do not understand why in our region they give a child 100,000 units and think nothing of repeating doses. Park also says that after the first dose is given, later injections, though not harmful, are useless; also that antitoxin remains in the body several days and that its highest antitoxin value is from twenty-four to seventy-two hours after the antitoxin globulin has been injected into the tissues. Farther on he says that the persistence of the antitoxin in the blood for a number of days is not grasped by most physicians. These, I am inclined to think, are the real reasons for such a variation, both as to mortality and as to the quantity of antitoxin. Is it true that antitoxin is made from one strain, or do the different states make their own? Where does New York get its supply, which has a low mortality, according to your statement (The Journal, Sept. 20, 1924, pp. 918 and 922). Does the Schick test have any bearing on the New York result?

George W. Reese, M.D., Shamokin, Pa.

Answer.—It is true that Park, in the article quoted, rightly insists that "the proper administration of antitoxin requires, therefore, that it be given so as to reach the toxin in sufficient amount at the earliest practical moment." He indicates what he considers a sufficient amount in various sorts of cases. His dosage varies greatly according to the severity of the case. He advises in children under 2 years of age from 2,000 to 10,000 units; in children from 2 to 15 years, from 3,000 to 20,000 units; in persons weighing more than 90 pounds (41 Kg.) from 3,000 to 50,000 units. The quotation as to repeated doses is inaccurate. What Park says is, "If the first dose is sufficient, later injections, though not harmful, are useless."

The determination of what is a sufficient dose in individual cases must be determined by the physician. He bases his conclusion on his clinical experience, taking into account the duration of the disease, the extent of involvement, and especially the degree of intoxication as evidenced by edematous swelling of the neck, acute nephritis, paleness, drowsiness and prostration. Even large clinical experience does not enable one to estimate with certainty in advance the amount of antitoxin needed by an individual case; and if the course of the disease indicates that the estimation has been too low, more must be administered subsequently. When a case is seen early, a single dose of a relatively small amount is often sufficient. Each case, however, should be watched, and if the disease progresses in spite of the primary dose, more must be administered. The large doses advised by many clinicians who have observed many cases in hospitals have been largely arrived at through repeated experiences like this. Patients who have been seen early by a physician who has administered from 3,000 to 5,000 units of antitoxin come into the hospital two or three days later with profound toxemia. The primary dose had been insufficient, the disease had progressed in spite of it, and any amount given after the longer interval might not be able to prevent death or late paralysis.

It is unfortunate that many physicians have received an incorrect impression from what Park has written. Perhaps he has not laid enough emphasis on the fact that sufficient antitoxin must be given at the earliest possible moment. Too many have wrongly concluded that one dose is always sufficient, which can only be the case if enough is given at the first injection.

Practically all the antitoxin used in this country is produced by immunizing horses with toxin produced by one strain of *Bacillus diphtheriae,* known as "Park 8." All antitoxin sold in interstate commerce is tested against a standard antitoxin furnished by the Hygienic Laboratory in Washington, and a unit in the serum of one manufacturer is the same as that in another.

Mortality statistics will vary with the type of disease prevalent at any time in the case of diphtheria, as in all infectious diseases, and variations in mortality must not be too implicitly credited to variations in procedure.

The Schick test can have no bearing on the New York results, except as it has led to the immunization of large numbers of children whose susceptibility to diphtheria has been determined by the test.

SKIN INOCULATION FOR RHEUMATISM

To the Editor:—Is there any truth in the following statement, which appeared in one of our local papers: "A method of skin inoculation as a cure for rheumatism is claimed to have been discovered by Dr. Gustav Paul, director of the state vaccination institute in Vienna. It is stated that the remedy has proved successful in over 600 cases and it is claimed that the cure is both simple and harmless." Can the remedy be had in this country?

H. S. Robertson, M.D., Elmira, Texas.

Answer.—Dr. Paul is director of the state vaccination institute at Vienna, and his report on his successful application of the Ponndorf vaccination method of treatment to rheumatism was published in the *Wiener klinische Wochenschrift,* Sept. 3, 1925. It was briefly summarized in The Journal, Oct. 17, 1925, p. 1265. He stated that he had had nearly 600 cases of rheumatism under his personal observation and treatment with vaccine in the last four years, and 342 had completed the course. "It was originally designed for treatment of tuberculosis, but it has proved a new and important means for treating all kinds of chronic disturbances in metabolism and nutrition—consequences of rheumatismal infection. . . . The Ponndorf vaccine consists of concentrated old tuberculin with empiric addition of autolyzed human and bovine tubercle bacilli. For mixed infection and in nontuberculous affections, autolysates of staphylococci, streptococci, pneumococci and other germs are added to the first vaccine. There does not seem to be any essential difference between the two. . . . The prognosis is more favorable when the local and the focal reactions are pronounced, with little or no general reaction. . . . The reaction to the gentle scarifications, not drawing blood, is the guide for the quantity of the vaccine to use. The waste products in the local reaction blend with the proteins in the vaccine to exert a really wonderful action from this vaccination of the skin in all forms of chronic rheumatism and gout." The Ponndorf method has been repeatedly mentioned in The Journal; for example, May 13, 1922, p. 1502, and Jan. 14, 1922, p. 154. The latest abstract on the subject is of Paul's article, and states that he "obtained perfect cures in 64 per cent and noticeable improvement in 30 per cent." Further details gleaned from Paul's article are that the cure was complete in 77 per cent of his forty-five cases of sciatica; 59 per cent in thirty-two of neuralgia; 73 per cent in twenty-six cases of muscular rheumatism, and 31.4 per cent in thirty-five cases of arthritis deformans. The other 257 cases are still under treatment.

KLIEG EYES

To the Editor:—A particular method for preventing Klieg eyes, so called, produced by intense light in motion picture studios, has been referred to us by the Association for the Preservation of Eyesight. This method uses a certain kind of colored screens to subdue and filter out the ultraviolet rays. We are interested in a further investigation of this subject in order to determine, if possible, to what extent careless using of intense light in motion picture studios is really responsible for Klieg eyes. I believe that Klieg eyes has been defined in the medical dictionary as being an inflammation of the inner membrane or conjunctiva of the eye. Dr. Romeo Roberto of Yonkers, N. Y., has suggested to me that possibly you may have available data giving the number of cases of Klieg eyes caused by intense light in motion picture studios in the United States which required medical treatment during a period, say, of one year. If you do not have this information, possibly you could suggest where it could be obtained.

J. M. Joy, New York.
Electrical Engineer.

Answer.—As far as can be ascertained, there has been no compilation of the number of cases of Klieg eyes that occur annually, nor is it known how many cases required treatment over a long period of time. Such data could be ascertained best by a questionnaire sent to the various moving picture studios. As far as is known at present, Klieg eyes result from exposure to ultraviolet rays in quantity. These rays vary in length from 396 millimicrons down, and the truly injurious effects do not begin to appear until the waves become shorter than 310 millimicrons. It is an extremely simple matter to filter out such rays without diminishing the total intensity of the light to an appreciable extent.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 12. Chairman, Dr. S. W. Welch, Montgomery.

Alaska: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.

Connecticut: New Haven, Feb. 13. *Basic Sciences.* Chairman, Charles M. Bakewell, Box 1895, Yale Station, New Haven.

District of Columbia: Jan. 12. Sec., Dr. Edgar P. Copeland, Apt. 104, Stoneleigh Court, Washington, D. C.

Hawaii: Honolulu, Jan. 11. Sec., Dr. G. C. Milnor, 401 So. Beretania St., Honolulu.

Illinois: Chicago, Jan. 19-21. Supt. of Reg., Mr. V. C. Michels, Springfield, Ill.

Indiana: Indianapolis, Jan. 12. Sec., Dr. W. T. Gott, 421 State House, Indianapolis.

Kansas: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

Minnesota: Minneapolis, Jan. 5-7. Sec., Dr. Thomas S. McDavitt, 734 Lowry Bldg., St. Paul.

National Board of Medical Examiners: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

New York: Albany, Buffalo, New York, Syracuse, Jan. 25-28. Chief, Mr. Herbert J. Hamilton, Department of Education, Albany.

Pennsylvania: Philadelphia, Jan. 26-30. Act. Sec., Mr. C. D. Koch, Harrisburg.

Philippine Islands: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

Porto Rico: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.

South Dakota: Pierre, Jan. 19. Dir. Med. Licensure, Dr. H. R. Kenaston, Bonesteel, S. D.

Vermont: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

Washington: Olympia, Jan. 12. Sec., Mr. William Melville, 15 Insurance Bldg., Olympia.

West Virginia: Charleston, Jan. 19. Sec., Dr. W. T. Henshaw, State Health Department, Charleston.

Wisconsin: Madison, Jan. 12-14. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

Wyoming: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

Illinois October Examination

Mr. V. C. Michels, superintendent of Registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, Oct. 6-8, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 70 candidates examined, 60 passed and 10 failed. Nineteen were licensed by reciprocity, and 1 by endorsement of his credentials. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine	(1896)	75
Emory University School of Medicine	(1924)	87
Chicago Medical School	(1923) 77, (1924)	76
General Medical College	(1924)	75, 76, 79, 80, 80
Loyola University School of Medicine	(1925)	78
Northwestern University Medical School	(1925)	79, 79, 80, 82, 83
Rush Medical College	(1924) 82, (1925)	79, 79, 80, 83, 83, 83, 84, 84, 85, 85, 85, 86, 87, 87, 89
University of Illinois College of Med.	(1925)	80, 81, 81, 81, 86, 89
Indiana University School of Medicine	(1924)	78
State University of Iowa College of Medicine	(1924)	88
University of Louisville School of Medicine	(1924)	84
Eclectic Medical University, Kansas City	(1917)	79
St. Louis University School of Medicine	(1923)	82, (1924) 75, 78, 81, 84, 85, (1925) 79
University Medical College of Kansas City	(1911)	79
Washington University School of Medicine	(1921) 82, (1924)	80
Syracuse University College of Medicine	(1923)	87
University of Cincinnati College of Medicine	(1924)	76
University of Pennsylvania School of Medicine	(1924)	85
Marquette University School of Medicine	(1925)	85
University of Toronto Faculty of Medicine	(1923)	87
University of Copenhagen, Denmark	*(1924)**	78
University of Naples, Italy	(1923)*	80
University of Odessa, Russia	(1918)*	79
University of Saratov, Russia	(1916)*	76

College — FAILED	Year Grad.	Per Cent
Chicago Medical School	(1923)	†
College of Med. and Surgery, Physio-Medical Chicago	(1911)	76‡
Meharry Medical College	(1914) 39, (1923)	62
University of Western Ontario Medical School	(1913)	78‡
University of Berlin, Germany	(1923)*	72
University of Naples, Italy	(1915)* 68, (1920, 2)*	69, 69
University of Palermo, Italy	(1923)*	†

College — LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1914) (1917)	Indiana Nebraska
College of Physicians and Surgeons, Chicago	(1902)	Montana
Indiana University School of Medicine	(1909)	Indiana
State University of Iowa College of Medicine	(1907), (1910)	Iowa
Kentucky School of Medicine	(1894)	Indiana
University of Louisville School of Medicine	(1921), (1922)	Kentucky
University of Michigan Medical School	(1921)	Michigan
University of Minnesota Medical School	(1916)	Minnesota
Washington University School of Medicine	(1923)	Kansas
Medical College of Ohio, Cincinnati	(1908)	Ohio
University of Oklahoma School of Medicine	(1918)	Oklahoma
Meharry Medical College	(1905), (1911), (1919) (1917) (1918)	Arkansas Kentucky Texas

College — ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Kansas School of Medicine	(1915)	U. S. Army

* Verification of graduation by the American Medical Association still incomplete.

† No grade given.

‡ Fell below 75 per cent in one or more subjects.

District of Columbia October Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, D. C., Oct. 13-15, 1925. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Twenty-eight candidates were examined, and all of them passed. One candidate was licensed through reciprocity. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent
Yale University School of Medicine	(1924)	85.8
Georgetown University School of Medicine	(1922)	87.3, (1925) 82.7, 86.2, 88.9, 90.8
George Washington University Medical School	(1925)	78.7, 81.2, 85.4, 85.8, 86.1, 86.6, 87.7
Howard University School of Medicine	(1925)	75.2, 75.3, 79.6, 80.3, 80.8, 84.6, 87.2
Rush Medical College	(1925)	87.9
Johns Hopkins University Medical Department	(1925)	87.8
Tufts College Medical School	(1922)	85.9
Washington University School of Medicine	(1925)	85.4
Creighton Medical College	(1925)	78.1
New York Homeo. Med. Coll. and Flower Hosp	(1925)	86.3
Medical College of Virginia	(1917)	78
University of Virginia Department of Medicine	(1923)	91.8

College — LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Bellevue Hospital Medical College	(1897)	N. Carolina

Kentucky June Examination

Dr. A. T. McCormack, secretary of the Board of Health of Kentucky, reports the written examination held at Louisville, June 9-11, 1925. The examination covered 10 subjects and included 110 questions. An average of 75 per cent was required to pass. Of the 51 candidates examined, 49, including 1 undergraduate, passed, and 2 failed. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent
University of Louisville, School of Med.	(1923) 88, (1925)	80, 80, 82, 83, 83, 84, 85, 85, 85, 85, 85, 85, 85, 86, 86, 86, 86, 87, 87, 87, 87, 87, 87, 87, 87, 88, 88, 88, 88, 88, 88, 88, 89, 89, 89, 89, 89, 90, 90, 90, 90, 91, 91, 92
Eclectic Medical College, Cincinnati	(1925)	88
Medical College of the State of South Carolina	(1925)	86
University of Palermo, Italy	(1922)*	80
Undergraduate		75

College — FAILED	Year Grad.	Per Cent
College of Physicians and Surgeons of St. Joseph	(1920)	67
University of Naples	(1921)*	68

* Verification of graduation by the American Medical Association *still incomplete.*

Book Notices

Modern Surgery, General and Operative. By John Chalmers DaCosta, M.D., LL.D., F.A.C.S., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia. Ninth edition. Cloth. Price, $10. Pp. 1527, with 1,200 illustrations. Philadelphia: W. B. Saunders Company, 1925.

This edition might almost be considered a new book, for so much new matter has been added and so many changes have been made that it was necessary to reset the type and to make the pages slightly wider and longer. The author has omitted certain chapters which he believed were necessary years ago, but which no longer find a place in books such as this. These include the chapters on surgical bacteriology, asepsis and antisepsis, and bandaging. Among the many important additions are a discussion of Buerger's disease, a new chapter on electrothermic methods of treating neoplasms, and a new section on radium. Many chapters have been rewritten, such as those dealing with tuberculosis, shock, syphilis, blood transfusion, fractures and dislocations, surgery of the respiratory organs, hernia, Coffey's operations for carcinoma of the rectum, anesthesia, goiter and roentgenotherapy. As was characteristic of the former editions, the work is intensely practical. Surgical diagnosis is presented in a clear and definite manner, and the indications for both medical and operative treatment are explained. Medical and operative treatment is discussed concisely but clearly and at sufficient length to be of value in the handling of patients in one's daily practice. The author has made a great many quotations, giving credit whenever possible. This greatly enhances the value of the book for both students and practitioners. The author expresses his opinion clearly and points out when his judgment differs with that of other surgeons of experience. He is modest in not insisting on his judgment, but is firm in his convictions. In not a few instances other surgeons of equal experience certainly will not agree with him, but on the whole his advice is excellent and can be followed as authority. The work will stand as a monument to the author, who, unfortunately, has been prevented from carrying on his operative work by a painful and prolonged illness.

Die Chirurgie. Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie unter Mitarbeit hervorragender Fachmänner. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 4. Band 1. Die allgemeine Lehre von den Verletzungen und den Wunden. Von Prof. Dr. Fr. Lotsch. Die Lehre von den Ersatzgliedern. Von Reg.-Med.-Rat. Dr. M. Böhm. Paper. Price, 12 marks. Pp. 397-638, with 220 illustrations. Berlin: Urban & Schwarzenberg, 1925.

The subjects covered in this volume of the fourth supplement are wounds and artificial limbs. The subject of wounds includes the bacteriology, pathologic changes and treatment of all types. Great emphasis is laid on amputation, and a large proportion of the space is devoted to the technic of various operations. More space might well have been devoted to the nonamputation treatment. The sterilization of wounds, although apparently deemed possible by the author, is scarcely mentioned. The chapters on artificial limbs are excellent.

Feeding and the Nutritional Disorders in Infancy and Childhood. By Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Fourth edition. Cloth. Price, $4.50. Pp. 556, with 43 illustrations. Philadelphia: F. A. Davis Company, 1925.

This is a clear and practical statement on the feeding of infants. Scientific reasons for statements made are given, down to p_H's and fractions; but they do not interfere when the physician is pressed for time. He can get the information he wants usually without recourse to the excellent index; for chapters and paragraphs are not too long, sentence structure is sometimes sacrificed to incisiveness, and purposeful repetition of important material makes memorable its location in the book. Facts themselves are made impressive; for instance, although percentages of various components in different milks are tabulated, the text states also that "there is three times as much protein in cow's milk as in human milk." The early chapters take up anatomy, physiology, bacteriology, breast feeding, mixed feeding, feeding of premature infants and artificial feeding, with food tables and specimen diets for infants of different ages. Midway of the book are presented nutritional disturbances with and without diarrhea, athrepsia, anhydremia, infection and celiac disease. The closing chapters are excellent articles on rickets, tetany, scurvy, acidosis and the anemias of infancy. The appendix is a manual of foods and how to make them, infant care and how to go about it, tables of average infant development and model charts. The avowed purpose of the work, "to place in the hands of teachers and students a manual on infant feeding and the nutritional disorders, to be used in preparation for clinical conferences," has resulted, also, in a compact volume that the general practitioner as well as the specialist will welcome.

Text-Book of Nervous Diseases. For the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D., LL.D., Professor of Nervous Diseases in Cornell University Medical College. Tenth edition. Cloth. Price, $7. Pp. 667, with 262 illustrations. New York: William Wood & Co., 1925.

When a textbook on nervous diseases appears in its tenth edition, the mere statement of that fact suffices to show that it meets the demands of a large number of readers. Since the author is not only a learned and able neurologist but also a man of unusual literary taste and ability, it is not surprising that the reader is introduced to the subject by way of a personality sketch of an ideal neurologist, a chapter on the history of neurology by Fielding H. Garrison, and one on preventive neurology. Anatomy and physiology are considered in their most essential features, and largely by means of excellent schematic drawings and tables. Throughout the book are excellent illustrations of gross lesions and the external appearance of patients; the style of presentation is uniformly clear. New subjects are given special consideration in this edition; for instance, there is a chapter on epidemic encephalitis by Thomas K. Davis. Aside from this chapter and the one by Garrison, the book has the strength and weakness of a one man book covering a wide subject. Neurology, even without psychiatry, is too big to enable any man to have first hand knowledge of every phase of it or to select for a book of a given size that which is most essential and most strictly up to date on every single subject. There are minor omissions, for instance, in regard to modern tests for spinal block and cisternal puncture, but we will forgive this as there are excellent illustrations of the appearance of air in the cerebral ventricles. The functional nervous diseases are treated with a brevity which probably indicates that the author is more interested in the organic field.

Psychoanalysis and the Psychic Disorder of General Paresis. By Stefan Hollós and S. Ferenczi. Authorized English by Gertrude M. Barnes and Günther Keil. Nervous and Mental Disease Monograph Series No. 42. Boards. Price, $1.50. Pp. 48. New York: Nervous and Mental Disease Publishing Company, 1925.

In the first part of this excellent monograph, Hollós discusses some of the literature relating to the psychic symptoms of general paresis. He presents clinical material, one case in detail and evidence from several others, to determine whether psychanalysis can be of use in making some of the symptoms of paresis intelligible and to see whether these interpretations correspond to the results obtained by psychanalytic investigation of the neuroses and psychoses. Ferenczi takes up the theoretical consideration of this problem. He does not overlook nor does he underestimate the fact that some psychic dysfunctions in paresis are the result of defects in somatic processes, but he considers at least part of the psychic symptoms as a neurotic reaction following injury to the brain or its function; namely, a "cerebral pathoneurosis." Expressed in psychanalytic terms, "part of the symptomatology of paresis corresponds to a physical dominance over the narcisistic libido dynamics mobilized through cerebral lesions." The regression of the ego in the various stages of paresis is then followed, and Ferenczi demonstrates that this regression takes place exactly as in the neuroses and psychoses, from higher stages of ego development downward. The entire subject might have been presented by the authors in more detail, but even with the material presented one may visualize the possibilities of psychanalysis in the field of organic psychiatry. No one can doubt the sincerity of the scientific attitude of both writers. This monograph deserves careful reading not only by the neuropsychiatrist and psychologist but by every physician. The translation is excellent.

Methods and Problems of Medical Education (Third Series). Paper. Pp. 242. New York: The Rockefeller Foundation, 1925.

This deals mainly with the subjects of anatomy, histology, physiologic chemistry and pharmacology, and one article each on obstetrics, gynecology and surgery. There are nineteen articles by authors of medicine who are professors in twelve of the leading universities of the United States and other countries. The reports are illustrated by building and floor plans of various laboratories, and other illustrations showing their equipment. From this report one can obtain an excellent comparative idea of the special laboratories in the various universities represented. It is of much value to officers of medical schools in which the erection of new medical buildings is contemplated.

Miscellany

FIRST INTERNATIONAL MALARIAL CONGRESS

The prime minister, Benito Mussolini, officially opened the First International Malaria Congress in the council chamber of the capitol at Rome, Oct. 4, 1925. The president of the congress, Senator Marchiafava, in welcoming the delegates, reviewed the development of research. The first scientific meeting was in homage to the memory of Laveran, and a French delegate was requested to preside. Professor Marchoux then read a paper on "Unity or Plurality of the Parasites." He said that the zygotes are different in the mosquitoes, that the time of evolution varied, and if mosquitoes were fed on carriers of one form, the same type of malaria is invariably transmitted to healthy subjects; benign tertian malaria alone causes splenomegaly, and the lesions generally differ according to the type of the parasite. Professor Mühlens of Hamburg said that he had made seventy transmissions with the benign tertian parasite without any change. Professor Brumpt of Paris cited observations made by Professor Darling in the Far East, and concluded that the three forms of parasite are distinct.

Professor Marie of Paris read a paper on "Malaria Therapy in Psychiatry"; Wagner-Jauregg, who first published his results with this treatment in 1913, experimented with peptone, tuberculin and other substances, but returned to the use of malaria in 1917, and established the technic now widely employed. The results in various countries show, said Professor Marie, that while paresis is not cured, stabilization takes place, so that readaptation to family life and social responsibilities is possible; the remissions seem to be from 30 to 50 per cent. of the cases treated. Malaria parasites are used in syphilis, also, to aid the action of therapy in the secondary stage; it is hoped in this way to arrest the changes that may have just begun in the central nervous system. Malaria parasites have been employed in dementia praecox, epilepsy, and in some cases of epidemic encephalitis. Professor Marie criticized the views of those who withhold this remedy in cases which are not clear-cut as to their nature, considering it better to act too early than too late; what we lack most of all, he said, is an early diagnostic sign of incipient general paralysis. In the discussion, Professor Mühlens said that among several hundred inoculations with parasites, using all three types of malaria and the spirillum of relapsing fever (in selected cases not too far advanced), 50 per cent. had been able to resume their occupation, and that when using the benign tertian parasite, there had been no deaths. Colonel James of Great Britain said that since one could never eliminate by the blood method the risk of injecting two kinds of parasites at the same time, it had been decided to inoculate only by means of mosquitoes, and that stocks of infected anopheles are distributed to those who need them. The results in more than a hundred cases appear to be better than when the blood method is used.

Dr. Perez, minister from Argentina to Italy, proposed that a permanent international malaria institute be created at Rome with the scientific and financial help of all nations. Senator Marchiafava stated that Italy is ready to give support to this new institution. The proposal was referred to the council.

In his paper on "Complement in Malaria," Professor Neri of Cagliari reported on thirty chronic cases in which he observed that in nearly all there was a diminution of complement, amounting to its practical disappearance. This may explain active schizogenesis without clinical relapse, and the absence of anaphylactic shock; it may also explain the predisposition of chronic malaria patients to other maladies. Professor Durck of Munich gave an illustrated lecture dealing with changes in the central nervous system in fatal cases of subtertian malaria. He said that the perivascular nodules found in malaria, typhus, epidemic encephalitis and pernicious anemia should be considered a defensive mechanism of the most perfect type by which the patient constructs a wall of cells around the destructive agent introduced into the circulation. Professor Bignami of Rome, in his paper on the "Pathology of Malaria," considered that the pathologic changes produced in the central nervous system in malaria were degenerative and proliferative but never inflammatory.

Dr. Carlos Chagas presided at the morning session, October 5, which was devoted to "Anopheles and Malaria; Epidemiologic Factors and Antilarva Measures." Dr. Sella reviewed the use of fish in antimosquito work since the introduction into Italy from the United States of *Gambusia affinis* in 1922; he was enthusiastic as to the future of this measure. Professor Muhlens stated that experiments in Argentina showed that the plant *Azolla filiculoida* deters the growth of mosquito larvae. Dr. Sella said that this plant does not grow when transplanted in Italy. Dr. Buen of Spain said that they have used *Gambusia* with success since 1921 in artificial ponds, and that their efficiency depends more on the number of fish present than on the density of the herbage; he was convinced that they were getting far better control at less cost by this method than with petroleum. Dr. Broden of Brussels said that the prophylactic use of quinin among natives in the tropics was unsatisfactory, and that the best method was to treat established cases efficiently.

At the afternoon session, Professor Gosio of Rome read a paper on the "Necessity for Increase and Coordination of Antimalarial Services." The most urgent problem is the supply of quinin, which should be ten times what it is and amount to 100 gm. for every person exposed to risk. Dr. Barber of the U. S. Public Health Service reviewed his work on "Paris Green as a Larvicide." Paris green may be applied through the entire season without harmful effect, and is employed diluted with 100 parts of dust as a suitable vehicle for wind conveyance over marshes; it has been distributed from airplanes. Paris green does not affect the pupae, but can affect the larvae of *culex* species under certain conditions. Dr. Hackett, director of the Rockefeller Foundation Work in Italy, said that a reduction of anopheles in trials made in Italy from 78.5 per cent. to 99 per cent. had been obtained under conditions in which petroleum could not be used; the United States has introduced a legal standard in which the Paris green must contain 50 per cent. of arsenous oxid. Among other papers was that of Dr. Chagas of Brazil on "The House—the Chief Place of Malarial Infection"; Dr. Kaufmann of Switzerland, on "The Synthesis of Cinchona Alkaloids," and Colonel James and Dr. Dale of Great Britain, on "Relative Therapeutic Efficacy of Quinin, Quinidin and Cinchonin in Malaria." Professor Ascoli of Rome, in a paper on the "Specific Treatment of Malaria," concluded that quinin would overcome all kinds of malarial fever, but that we are not justified in denying its antiparasitic properties; its effects vary with the dosage and with the stage in the life cycle of the parasite; in primitive malaria, quinin is supreme; the malignant form requires a greater concentration, but he has never found that malaria resists quinin; neo-arsphenamin and stovarsol are useful in benign tertian, but quinin remains "the queen of all specific remedies in malaria."

IRON AND STEEL ACCIDENTS

Industrial surgeons and safety experts will be interested in the preliminary brief report of the trend of accident rates in the iron and steel industry recently published by the United States Department of Labor (Chaney, L. W.: Industrial Accidents and Hygiene: Monthly Labor Review, Bureau of Labor Statistics, U. S. Depart. of Labor **21**:142 [Dec.] 1925). The year 1924 marks the close of the third five year period wherein it has been possible to compile the exposure and the accompanying accidents for practically the entire iron and steel industry. For all departments, the total of accident frequency rates per million hours' exposure for the period 1910-1914 was 59.2; for 1920-1924, 33.6. Computed in the same way, and representing the same periods, the frequency of death has dropped from 0.4 to 0.2; permanent disability, from 1.3 to 0.9; temporary disability, from 57.5 to 32.5. Puddling mills and forge shops are the two departments of the entire industry which show an increase in total accident frequency when a comparison is made between the first and the last of the five year periods for which the rates have been computed.

Accident severity rates, computed per thousand hours of exposure, have likewise shown a downward trend. For all departments the total severity rate for the period 1910-1914 was 4.1; for 1920-1924, 2.8. Ascertained in the same way and representing the same periods, the frequency of death has dropped from 2.3 to 1.5; permanent disability from 1.1 to 0.8; temporary disability from 0.7 to 0.5.

Medicolegal

Testimony Required as to Injury Causing Disease

(McCrosson v. Philadelphia Rapid Transit Co. (Pa.), 129 Atl. 4, 568)

The Supreme Court of Pennsylvania, in reversing a judgment for damages that was rendered in favor of the plaintiff, says that some seven weeks after the accident attributable to the defendant's negligence, in which accident the plaintiff sustained personal injuries, the plaintiff became sick with lobar pneumonia and was taken to a hospital for treatment. A physician who testified for the plaintiff declared that he could not say that the injury caused the pneumonia; but he said that, from the results of the plaintiff's injury, of course, her general system would be run down and make her perhaps more susceptible to pneumonia. It was resistance lessened. She was more susceptible to the pneumonia from having had this accident. On the point under consideration there was no other evidence of equal probative value with that physician's. It would have justified the trial judge in saying to the jury that, if they believed it, they would be entitled to give due consideration to it, with respect to the general effect of the accident on the plaintiff's health, and, perhaps, on her earning power also; but it did not justify proof regarding the pneumonia, nor the submission of its effect or expense, as distinct items of damage, since it wholly failed to show with reasonable certainty that the disease was caused by the injury received.

Where the connection, if any, between an injury and a subsequent disease must be shown by medical testimony, the "reasonable certainty" required to be established is exactly the same test as specified in *Fink* v. *Sheldon Axle & Spring Company*, 270 Pa. 476, 113 Atl. 666, and the cases in its train; that is, when "expert testimony is relied on to show the connection between an alleged cause and a certain result, it is not enough for the doctors to say simply that the ailment in question might have resulted from the assigned cause, or that the one could have brought about the other; they must go further and testify at least that, taking into consideration all the attending data, it is their professional opinion the result in question most probably came from the cause alleged." Judging from some of the records which have reached this court since that case was decided, even this plain and easily understood language (based on the essential rule of law that no one can be held liable to answer in damages for that which is not proved to have been caused by him) has been frequently misunderstood. This court did not say the evidence must show that the "result in question most probably (might have come) from the cause alleged" but that "most probably (it actually) came from" it. What this court said required the expert to testify, if recovery was to be allowed, that in his "professional opinion the result in question (did) come from the cause alleged"; and hence, in order to avoid further misapprehension, this court now announces that hereafter no consideration will be given to expert testimony on this point, unless it is as explicit as the court has stated. Of course, human frailty prevents absolute certainty in this class of cases; but, if one having special knowledge on the subject cannot, in conscience, say that in his "professional opinion the result in question did not come from the cause alleged," there is in fact nothing in the evidence from which a jury, having no such knowledge, could possibly find that it did. That was the exact situation in the instant case, so far as concerned the attack of pneumonia.

Insufficient Foundation for Action for Malpractice

(Gramaldi v. Zeglio et al. (N. J.), 129 Atl. R. 475)

The Supreme Court of New Jersey says that while the plaintiff was attempting to crank an automobile the crank flew back, striking his wrist and breaking the bones above it. He was taken to a hospital, where he was received by two interns who, he contended, caused a simple fracture to result in a compound one, which they diagnosed the injury as being. The interns could not reach the visiting surgeon, but got his assistant and with the latter dressed the wound and slipped the bones back into place. The visiting surgeon saw the plaintiff the next day and had the case for three weeks. On the third day after the accident, there was pus mixed with the exuding serum, but three days later the temperature became normal and continued so for the remainder of the three weeks. Later, osteomyelitis developed, which resulted in the loss of the use of the arm, and the plaintiff subsequently instituted this action for malpractice against the visiting surgeon and the two interns. At the conclusion of the testimony, motions were made in behalf of all the defendants to direct a verdict in their favor. That motion was denied as to the interns, but granted as to the visiting surgeon. With the propriety of the ruling as to the interns, this court had nothing to do, as it was not before the court; but the question of the correctness of the ruling as to the visiting surgeon was before the court, and it holds that the ruling was right.

The testimony in its most favorable aspect for the plaintiff failed to show, in this court's opinion, that the visiting surgeon did any negligent act which caused the infection. The testimony showed that treatment of an infected arm by drainage, as was done in this case, was a well recognized and standard form of treatment. The fact that the plaintiff introduced evidence of physicians and surgeons that they would have made incisions in the arm which would have laid it open from the wrist to the elbow was not evidence of malpractice. Surgeons of eminence frequently differ in their opinions as to the treatment to be used in a given case. To permit a jury to pass on the question of malpractice because testimony is given by physicians that they would have used a different treatment from the one prescribed or followed would be to make a physician or surgeon a guarantor of the success of his treatment in every case. If he fails to restore his patient, he must face a lawsuit, with its accompanying annoyances and expenses. If the plaintiff's position was sound, a jury must pass on the question whether the treatment given was correct or not. As the plaintiff did not respond to the treatment given and his arm did not become restored to its condition prior to the fracture, it could be expected that a jury would reach the conclusion that some other treatment of the condition which arose should have been applied. The result would be to return a verdict for the plaintiff, notwithstanding the fact that the same infection might have followed the other kind of treatment. If such were the law, there would be few physicians and surgeons who would undertake to treat a case, for every failure to effect a cure would lay the basis for a lawsuit.

It takes more than the opinion of one or more physicians or surgeons that the treatment followed in a given case should have been different to lay a foundation for malpractice. A case of malpractice cannot be proved by the testimony of a few physicians or surgeons that they would have used some other treatment than the one used, in the absence of testimony from which it can be inferred that the defendant failed to give to the case that skill and care ordinarily possessed and exercised by others in the profession. The skill and care a physician is required to give a patient is that ordinarily possessed and exercised by others in the profession. A physician is not a guarantor without express contract of the good effects of his treatment, and he undertakes to do only what can ordinarily be done under similar circumstances.

Testimony Concerning Roentgenogram Permitted

(Mercado v. Nelson (Kan.), 235 Pac. R. 123)

The Supreme Court of Kansas says that, in this action to recover damages for personal injuries, complaint was made that a physician and surgeon who had treated the plaintiff *testified concerning a roentgenogram of the plaintiff's injuries.* The picture had been taken by another person, who was not produced as a witness, but it had been taken on the order of the witness who was testifying. The objection was that no foundation had been laid for the introduction of the picture. However, in the opinion of the court, there was no reversible error committed in the admission of evidence.

How the Reasonable Value of Services Is Proved

(Maryland Casualty Co. v. Sweek (Ariz.), 236 Pac. R. 720)

The Supreme Court of Arizona, in affirming a judgment for $400 in favor of plaintiff Sweek and against the defendant company, says that he brought suit against the company and one Hamm for professional services alleged to have been rendered Hamm at the special instance and request of both defendants, for which they promised to pay the reasonable value of such services, which the plaintiff alleged to be $474. The company answered that it did authorize the plaintiff to perform an operation on Hamm and agreed to pay for it $150, for which sum the plaintiff agreed to perform the operation; that the company denied that it requested or authorized any other or future services to be rendered by the plaintiff for Hamm. A jury returned a verdict of $400 in favor of the plaintiff. As the evidence was conflicting, the verdict of the jury was conclusive as to the weight and sufficiency of the evidence. It was clearly error, however, to allow the testimony of a physician on direct examination, as to what he charged for similar operations, to stand. Reasonable value is proved by the general customary charges for similar services, and not by what some particular person charges; and the witness stated that he did not know the general custom. But, should the case be reversed for this reason? Appellate courts are becoming more and more reluctant, and this court thinks properly, to reverse a case for error in procedure, which did not affect the result. If the evidence as to the value of the services had been in conflict, this court might assume that the error complained of had some effect, but none of the witnesses fixed the value of the services at less than the amount of the verdict, while some of them were considerably higher; and this physician's figure was the highest of all, but the jury did not accept it. Under these circumstances this court does not think that the erroneous admission of the testimony affected the result, and does not think that the error was of sufficient gravity to warrant a reversal of the judgment. The case was tried on the issue of whether or not there was a specific agreement for a definite sum to be paid. So far as the extent of services was concerned, the only witness for the defendant company stated, "I expect a physician should treat a man for what is wrong with him." The jury, on a direct conflict of evidence and on instructions which placed that issue clearly before it, found that there was no agreement as to the price. The plaintiff was therefore entitled to recover on a quantum meruit (the reasonable value of his services).

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

Isthmian Canal Zone, Medical Association of, Ancon, Jan. 19. Dr. David L. Robeson, Ancon Hospital, Ancon, Secretary.

Sioux Valley Medical Association, Sioux City, Iowa, Jan. 19-20. Dr. R. F. Bellaire, Trimble Block, Sioux City, Secretary.

CONFERENCE ON PERIODIC HEALTH EXAMINATIONS OF APPARENTLY HEALTHY PERSONS

Held at Headquarters of the American Medical Association, Chicago, Nov. 20, 1925

Dr. Allen H. Bunce in the Chair

(Concluded from page 66)

November 21—Morning

How a Health Examination Should Be Conducted

Dr. Charles Elliott, Chicago: [A demonstration health examination, with comments on the findings.]

DISCUSSION

Dr. Haven Emerson, New York: Dr. Elliott spoke of the average weight. We should be demanding tables of optimum weights instead of average weights. At the different age groups there is wide difference between the optimum and average, more so at the age of 45 than there is below that.

In the examination for hernia, some examiners have the persons stand on their toes and stretch their hands up to open all orifices and allow the examiner to see whether there is any weakness. It is of great importance to find out whether people can use each one of their body joints satisfactorily. If there is only one method used for the education of physicians and the development of public interest, it ought to be a physical examination by a physician before medical societies.

Dr. Elliott B. Edie, *Uniontown, Pa.: I should like to ask* whether the doctor would have gone further in search for infection if time had allowed.

Dr. J. M. Dodson, Chicago: Dr. Elliott could not tell the whole story, comment on every item and get through in an hour, if he had included all these points of focal infection.

Dr. Orlando H. Petty, Philadelphia: Dr. Elliott's examination confirms the impression that it is something entirely different from diagnosing disease; a searching out for disease states and tendencies. If we are thorough, we shall have no trouble educating the public.

Dr. Charles Elliott, Chicago: Such an examination as this might become routine and machine-like. One should apply his best knowledge and individualize the patient.

Dr. J. M. Dodson, Chicago: The medical schools have been slow to awaken to the importance of the whole preventive side of medicine in the teaching of the undergraduate. The second topic on our program is the education of the undergraduate medical student in the matter of thorough, effective conduct of examinations of this type.

THE PHYSICIAN: AROUSING HIS INTEREST AND EDUCATING HIM FOR THE THOROUGH, EFFECTIVE CONDUCT OF PERIODIC HEALTH EXAMINATIONS

The Undergraduate Medical Student

Dr. Charles P. Emerson, Indianapolis: The suggestion that examinations be periodic may be a new idea, but the examination of apparently well persons certainly is not new. The methods of physical examination are not new. The ability to prove by physical examination that an organ is diseased certainly presupposes one's ability to pronounce it free from disease. Our physicians have never waited for official encouragement before training themselves in the technic of a new method of diagnosis, of a new medical therapy, or of a new operation. Why, then, do they not hasten to offer this form of service? Can it be possible that the doctors really do not want to make these examinations? Or have they some psychologic barrier, some mental "complex," which inhibits their interest. We are invited to discuss this subject from the point of view of the medical student.

The trouble is not so much in the educational content of the curriculum, but in the philosophy that shaped it. The premedical requirements now in force tend automatically to exclude from the medical school those students who would make good general practitioners, and attracts, as Dr. Frankwood Williams has pointed out to us, men who are mechanically motivated and whose interest in research is especially in the fields of the physical sciences. Can we not attract some of the other types also? But here one point needs emphasis: we are not suggesting any lowering of medical educational standards. We wish for our medical schools the best men in college, not the best of one single group only.

The best plan we can suggest is to start the student in the wards not later than at the beginning of the second year and then during the next three years to teach the preclinical and clinical subjects as parallel courses rather than as courses in series. In this way observation of the patient becomes the primary mental process, and the student attempts to use the sciences in order better to understand his patient. We must train him to a better appreciation of physical diagnosis and must create in him a different attitude of responsibility toward the public. In the examination of the sick, the doctors would seem "to get by" fairly well without physical examination, but not when studying the well. These examinations, to be well done, will require an hour each, and the fee will be relatively small and the procedure rather uninteresting to the doctor. Naturally, some do not welcome this new service, which resembles more that of public health officers, with whom of late years physicians have had less and less in common. We suspect, however, that, try as hard as they may, many of the modern medical students will have a psychologic difficulty in really interesting themselves in such service. This suggests the desirability of attracting a different group of students into medical schools, and that in turn suggests a reorganization of our medical schools.

DISCUSSION

Dr. Joseph L. Miller, Chicago: Dr. Emerson stated in public what many of us have thought and have been afraid to speak. Are we getting as many men to enter into medicine with the public service spirit as we did years ago? Does higher education keep those men from coming to medical schools, or does higher education take out of a man his interest for humanity? The commercial spirit, which is so widespread among the medical students, seems to dominate medicine more than it did twenty-five or thirty years ago. In the old days before we had laboratory methods, people became very expert in physical diagnosis. Laboratory methods have helped us, and our diagnoses are more accurate, but, we do not have a laboratory always with us. Teaching health examinations is different from teaching physical diagnosis on the patient. It becomes necessary to go into family history in considerable detail to find out if a patient's forebears suffered from tuberculosis, chronic arthritis, nervous disease or obesity. We must go into his personal habits and his occupation, if necessary into the questions of fresh air, ventilation and hours of work. It is just as important to find out how he spends his evenings. We have to find out exactly what things he is doing that he should not do in order to give him advice. Hours of sleep are important. We must find out what he does on Sundays, holidays and vacations. If he has no recreations, I believe we ought to encourage him, especially if he has a nervous parity, to develop some fad. The man who has no recreations does not know what to do with a vacation. If such a man breaks down, there is nothing that we can advise him to do in which he is interested. We must find out whether he is a worrier, and whether he has real or imaginary worries. We can make suggestions that will be helpful. Each one must live not as his neighbors live, but as his own personality and his own constitution require. The use of alcohol, tobacco and coffee might be gone into. I think here is a splendid opportunity to educate the man who comes to us. We should go into detail as to whether he is subject to certain acute diseases: tonsillitis, bronchitis. We can advise how to relieve constipation without drugs, and all of those things. Our function should be not merely examination of the healthy, but the examination and education of the healthy. The dangers of venereal diseases can be brought up. We want to give this man some little pointers that will help him through life.

Dr. J. H. Cannon, Charleston, S. C.: I would appreciate it if the gentlemen associated with the medical schools would tell me what they are doing for the undergraduate student as regards his instruction in these health examinations. Do they contemplate or have they instituted any additional measures as a part of the curriculum or as additions to the curriculum?

Dr. C. B. Conklin, Washington, D. C.: In the medical schools, the laboratory end of the teaching has been stressed, possibly to the exclusion of other things, but I believe that the modern student is getting instruction that should equip him to make a satisfactory examination. In the student's mind there should be a definite routine procedure in every examination. The student's mind has not been impressed with the fact that a large part of his function is to keep people well. I plan to take with me some of these books of instruction and also these slips for examination and to have the students make examinations of one another. Cabot's "Social Service and the Art of Healing," and books of that character, if placed somewhere in the course or given to the new graduate along with his diploma, teach him that his is a life of service. Somebody suggested that the graduate be required to take an entire year under a country practitioner, the old preceptor system; it might possibly change his point of view.

Dr. Anna Mann Richardson, New York: In Cornell, students examining one another did not work at all, because the students do not take it seriously enough and they cannot be frank with one another. Each senior student this year will have an individual examination paid for by the college, and it will be followed by talks on the hygiene they need to know, which has to do with diet, physical exercise and the psychology of the well person.

Dr. Haven Emerson, New York: In the last three years we have had all students examined. There it is that the service to each student in helping him with his general manner of living comes in. We do not consider that the teaching of physical examination in the second year is at such a time that one can teach periodic health examinations; there one has to spend the time on the technic and method of the work.

Dr. J. M. Dodson, Chicago: Hooking up the working and living conditions with the physical findings is not being taught in more than three or four medical schools in this country. It is not a matter of injecting a lot of new material into the curriculum, it is a question of the attitude of mind of the clinical teachers toward the matter.

Dr. F. C. Hammond, Philadelphia: If somewhere in the curriculum of the senior year a stomatologist could give a few lectures or clinics, boys could go out with this as a part of the periodic examination.

Dr. Henry O. Reik, Atlantic City, N. J.: Concerning conditions in the medical school, the attitude of the young medical graduate and of what the physician is going to do when he goes out into practice, Dr. Emerson has given us a materpiece of analysis. When we are dealing with the family physician regarding this periodic health examination we have got to teach him over how to use the knowledge that he has.

Dr. Charles Emerson, Indianapolis: We now require our students to have two hours, one semester course in physical diagnosis. We then give them a whole year of clinical college work in the wards. We then require practically every one to have a whole year of internship under supervision. The older men never had two years under supervision in which they were supposed to do diagnosis in a large number of interesting cases. They did physical diagnosis; that is the difference. I cannot admit two technics, the one of examining the sick person and the other of examining the well person. I can admit two different kinds of service that one does with it. Dr. Elliott this morning gave us a good deal of pure technic. Then you ask, "Are we going to teach this?" Frankly, as a dean, how can we if the American Medical Association says to keep your hours down to 1,000 a year? We must cut down the course. I do not believe that the boys of the colleges are getting more materialistic. I think they are getting less so. They are much less materialistic than ten or fifteen years ago, but our medical schools are culling out from the whole group a little different type of man than the medical schools of that day. The technic of physical diagnosis is one thing; the service which one makes of it is quite a different thing. You ask us to appeal to our students to give this form of service, but you can help us with the state boards and in a good many different ways, but we have got to get a little different culling of students from the body as a whole if this is going to be perfectly satisfactory.

EDUCATION OF THE LAITY

Dr. J. M. Dodson, Chicago: The final group of topics on the program has to do with the education of the public. That is coming on more satisfactorily than many of the men realize. At the same time, while I believe outside agencies should do the major part of it, in many places the medical profession will have to devote some attention to arousing interest.

Education of the Laity by Lay Medical Health Associations

Dr. Hoyt Dearholt, Milwaukee: We lay medical organizations, as you yourselves have shown during this meeting, have occasion frequently to be critical of the attitude of the physician toward the public health movement. We know, in turn, that you doctors frequently have occasion to be critical of us in the lay medical health associations. The function of lay medical organizations is that of selling the medical profession to the public. Cultism is evidence that the public has not an overly great amount of respect, confidence or faith in the medical profession. A peculiar thing about the doctor is the attitude that the people can attribute their own lack of health or their failure to take advantage of the things that physicians can offer to them, to utter indifference. That, of course, is absurd. They all want that fifteen years of additional life that Fisher and the other medical economists offer and have promised to them, only they do not know how to go about it to get it. The lay medical organization can do for the physicians what the physicians cannot convincingly or in good taste do for themselves. It has been amazing to me that physicians have been so slow to grasp this opportunity. I do not have much quarrel with the medical profession for the manner in which it meets its obligations; I think it does it pretty well, but I do think that physicians are rather slow in grasping the opportunity to push their profession forward.

I should like to show a card we recently got out for distribution through the doctors' offices, simply calling attention to the fact that tuberculosis, chronic nephritis, heart disease, apoplexy, are more easily prevented than cured, calling on the public to realize the value of the periodic physical examination. Some of the doctors thought we were asking them to hang this up in their offices to advertise our organization. That was not the primary purpose. Physicians would not hang a card up advertising themselves; it was felt that if it was signed with the name of a well known and popular lay health organization there should be no diffidence on their part in doing so. Another little enterprise our organization has entered on. It has seemed to me as a physician that we have been exceedingly slow to get ourselves, our profession, or our art known by the general public as much as we should, therefore, during the year our organization got out a series of charts. We have put in every school room in the state of Wisconsin one of these charts each month with one after another of the medical heroes listed. I heard one of the superintendents of a Wisconsin tuberculosis sanatorium admit the other day that 80 per cent of the patients admitted into that institution come in in an advanced stage of the disease. A large part of that fault lies with the consumptive himself. We know a very large part of this fault lies with the medical profession. If we lay medical health organizations can keep pushing up to the medical profession the cases which will constitute an obligation on the part of medical men to examine the cases, we hope that more early diagnoses will be made.

We hear a great deal about the menace of state medicine that may come from and through the work of lay health organizations. The lay medical organization offers the best means in the world to push it back. I am among those who detest the whole idea of state medicine, and I am very strongly for individual medicine. Many of the things that are being taught by lay health organizations are perfectly absurd and ridiculous. Whose fault is that? The medical profession has allowed the leadership in these lay medical organizations to get out of their own hands. They have been left too much to well intentioned people without the background that leaders in these organizations should have. If you find your lay health organization not serving the cause of medicine and the medical profession as well as you think it ought to, do not knock it. Go into it vigorously and see to it that the leadership is taken by men who have the right background and the ability to make that work take the course that they know it should take.

Education of the Laity by Examinations at Health Expositions and Exhibits

Dr. Roy R. Ferguson, Chicago: The family physicians are the ones who are doing the bulk of the work and the ones who will do the bulk of the work in these periodic health examinations. There are thousands of them who are capable of doing these things, and yet we do not object to a little instruction on certain lines. General practitioners are just as altruistic as specialists. We believe that in giving these people the right periodic health examination and then giving them the right advice we are extending life eight or ten or twelve or fifteen years. But we must remember that the doctors must be fed while they are doing this work, and the Illinois State Medical Society believes in getting the public to them and in furnishing them with this examination blank.

Last spring the Illinois State Medical Society held a national baby congress and health exposition. In about a month after the exposition was closed, we sent a complete chart together with a letter to the mother of every child who was examined. Half of the family physicians in Chicago probably received anywhere from one to five of these children referred back to them for the proper care and not referred to clinics free of charge when they can afford to pay for such a thing. We ran, also, a physical examination in just about the same manner that Dr. Elliott demonstrated to us this morning. We gave that patient enough of an examination to make him understand that it is necessary for him every six months or every year or every two years to have a check up. Our lay eduction committee, working with the women's clubs of the state, of which there are more than 70,000 members, have entered into an agreement whereby every one of those women is to see that one preschool child is taken to a physician for a check up. That work should not be done free of charge; it is educational, it is for the benefit of the public.

We have sent out with our state medical journal an examination blank, and we keep a check on every one of these, because the doctors will be advised as to where to send their reports. We take into our work the dentists, and the dentists are doing excellent work in all referred work. We are now holding baby health shows in different parts of the state, in different parts of the city, but we have not yet begun to hold those things the way we expect to in the future. The state department of health has always been holding baby shows in connection with state fairs. The county medical society should be the organization to oversee the examination at these health expositions. I believe that our department of health is also of the opinion that the medical society should do these things. We should have been doing them all these years, and it has taken some of the good lay educational associations to wake us up. There are a few good ones. We have held in the city of Chicago at least six baby health conferences. We are staging for the Illinois Dental Society at its meeting here a physical examination as it should be done completely, so they can talk physical examinations to their people the same as we talk dental examination to our people. Our work is not to give service which runs into the hundreds of millions to those who can afford to pay for this service, but only to get the people as a whole to thinking periodic health examinations. When such examinations are done by the medical profession, then all defects should be referred back to the family physician and not to lay clinics for correction.

Dr. J. M. Dodson, Chicago: I like to think of the time when every medical man, every practitioner will think he is a constituent and integral part of the health department of the state. We are fortunate in having here the commissioner of health of Connecticut.

Education of the Laity by Departments of Public Health

Dr. Stanley H. Osborn, Hartford, Conn.: The keynote of the state department of health of Connecticut is to make the physicians and the general practitioners realize they are a part of the public health program. The Connecticut state department of health is in closer contact with physicians at the present time than ever in the past. We have attempted to stear clear of anything that would suggest state medicine, and the opposite, of course, is to tell the physician everything we are doing. The result has been that the Connecticut state medical society has a special committee appointed to work with the state department of health.

We are selling periodic health examinations in Connecticut just exactly the way any commercial firm goes about selling a commodity; that is, using the old axiom of supply and demand. If we can make a demand on physicians for health examinations, we shall not have to worry whether the physician today knows how to do those examinations or not. We are attempting in two ways to foster the periodic health examination movement, one of which is modestly and without any head lines to inform the physician (it could not be called educating the physician) that there is such a movement under way, and try to show to him through talks at the county and state meetings the fact that he is quite a factor in this particular public health movement. The other is stimulating the people in any way we can to show them the value of it, and then they will go to the physician and ask for such an examination. We are trying to stimulate the demand for such examinations by the usual things: talks, pamphlets, leaflets, radio, films, everything under the sun; and in every little place: church meetings, town meetings, welfare meetings, anything at all that will be stimulating to the public. We have issued in Connecticut periodic health examination blank. This blank of ours is in duplicate, so that a carbon can be put between. We had to get something which would not seem too severe to start with. We felt that the American Medical Association blank was ideal to work for and perhaps elaborate later on.

As for results, we are having come into the office innumerable requests for these blanks, twenty-fives and fifties. We have had several requests from physicians for 500 copies. We furnished them at cost. The health examination work is going ahead with leaps and bounds. We are going to issue to each physician in the state a little manual that the American Medical Association has just gotten out. The material is wanted and it is being talked about now. They are going to read it or use it, whereas six months or a year from now they would not look at it half so much. It is not the splurge once a year that is going to have half the effect that the constant hammering, month by month, will have, and the ways of doing that are through leaflets, weekly health bulletins, pamphlets and the radio.

Dr. J. M. Dodson, Chicago: Dr. D. Chester Brown, of the Board of Trustees of the American Medical Association, in charge of the Committee on Scientific Exhibits, has an announcement to make.

Dr. D. Chester Brown, Danbury, Conn.: The Committee on Scientific Exhibits has under consideration the construction of films or slides relative to making these examinations to interest the general practitioner. When that is accomplished, they will be used for the scientific exhibit first and then they will be lent or rented to the various constituent organizations of the American Medical Association.

Dr. J. M. Dodson, Chicago: The subject is open for general discussion.

Dr. I. D. Rawlings, Springfield, Ill.: We have tried to promote this demand for the health examinations. We have used the newspaper releases each week to 200 newspapers in the state, a weekly bulletin on some live subject, and in almost all of these, or in many of them, we are able to stress the annual physical examination in a line or two. We send out healthgrams. This often has an item on the annual physical examination. We had health films. For a number of years we have had better baby conferences at Springfield and the fifty or sixty state fairs. We have a monthly publication that goes to 20,000 people in the state, our *Health News*, and in that we have frequent publicity for education and for publicity of the physical examination. In our work down state we found first we had difficulty in getting the cooperation of the physicians. Instead of going to the state secretary, as we should have done, we went to societies favoring this sort of work and we did not get the cooperation we would have gotten otherwise. In the last two years the county medical society has cooperated with us wonderfully. We are hoping that all this will be taken over by them, at least all the medical part of the examinations.

Dr. H. E. Dearholt, Milwaukee: The question has come through this whole conference, Who is going to pay? I think that a good way to pay, probably the best way, is for the public to make its contributions to some lay organization, some lay medical health organization, and then the physical examinations given by that organization shall be free. The whole thing is a matter of salesmanship. Free demonstration has had an enormous amount to do with the popularity of the automobile. If we could look beyond the immediate dollar to the ultimate dollar, we should not have so much question about who is going to pay.

Dr. J. M. Dodson, Chicago: I did want to call attention to one serious danger in the manner in which these examinations are conducted at expositions. They are conducted by a group of specialists. It is teaching the public absolutely the wrong thing, for that is not the way these examinations can be conducted if they become general. We are doing a similar thing in our medical schools today. Every patient entering a dispensary or a hospital ought first to be examined thoroughly from top to toe by a general practitioner or his equivalent, and then when it is discovered that he belongs in a particular department, he should be referred there. Yet, in practically all the outpatient departments of our medical schools, our students are being taught in a way which emphasizes the necessity of specialism. That is one reason why we are not graduating any more general practitioners.

Dr. E. B. Edie, Uniontown, Pa.: My topic was the education of the laity by newspapers and magazines. Those are national affairs and I had to take it in a national way. It seemed to me that there would have to be some national headquarters to do that work. I suggested a more or less professional publicity man. Since getting here, I think we have those men. I do not see why we should not have a separate organization with an interlocking director, which could take money from wealthy persons to carry out health conservation service. I suggested that we also have men in the profession who could do this thing in a big way. We have them right here. You have got the idea that I was saying that the general practitioner could not do these examinations. He can do the physical examination. I hope this thing is going to lead to a state where we are going to pick up the early things, which are largely focal infections. The general practitioner is not capable at this time of doing these examinations without help. As to the young man going into medicine, service is a religion now. This is the greatest service in the world.

Dr. J. M. Dodson, Chicago: We hope that you will keep us informed as to any new methods of getting the general practitioners interested in this matter and educating them for this service so we may use that information to help other groups who are seeking the same end.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Electrotherapeutics and Radiology, New York

93: 399 438 (Nov) 1925

Physiotherapy Department and Hospital. A. B. Hirsh and R. Kovacs, New York —p. 399.

Laboratory Methods in Teaching of Physical Therapeutics. W. H. MacCraken, Detroit —p. 404

Facts and Fallacies of Physical Therapy M Fishbein, Chicago —p 407.

Why We Use the Static Current. W. B. Snow, New York —p 412.

American Journal of Hygiene, Baltimore

5: 709 858 (Nov) 1925

*Changes in Intestinal Flora of Rats on Calcium Deficient Diet. R. E. Hoffstadt and S. J. Johnson, Seattle —p 709.

*Epidemiology of Infantile Paralysis Relation Between Multiple Cases in Same Family. W. L Aycock and P. Eaton, Boston —p 724.

*Comparison Between Multiple Cases of Measles, Scarlet Fever and Infantile Paralysis W. L Aycock and P. Eaton, Boston —p 733.

Infection and Resistance in Bird Malaria; Periodicity and Rate of Reproduction of Parasite. L. G. Taliaferro, Baltimore —p. 742.

Factors That Influence Rate of Increase of Hookworm Infection. W. A. Sawyer, Baltimore —p 790

Influence of Certain Experimental Factors on Course of Infections with Plasmodium Praecox. G H Boyd, Baltimore —p 818

*Experimental Investigation of Supposed Relation Between Good Physical Condition and Natural Resistance to Infection. R. A Spaeth, Baltimore —p. 839.

Effect of Calcium Deficient Diet on Intestinal Flora.—The observation made by Hoffstadt and Johnson shows that a calcium deficient diet causes definite constipation and lowers the aerobic bacterial count. Probably neither aerobic nor anaerobic bacteria cause the constipation A calcium deficient diet caused the collapse of the small intestine with an apparent thinning of the wall.

Epidemiology of Infantile Paralysis.—The time interval between cases of multiple infantile paralysis in 253 families has been studied by Aycock and Eaton. The diagnosis of abortive cases of infantile paralysis is influenced to such an extent by the presence of cases showing paralysis in the same family that their inclusion gives an erroneous impression of the interval between multiple cases. A study of cases showing multiple paralysis indicates that a large proportion of so-called secondary cases arise from a common source with their respective primary cases The much smaller proportion of cases presenting secondary paralysis in the same family, which occurred from ten to eighteen days, averaging fourteen days, after the primary cases, are regarded as probable true secondary cases. These findings, in connection with a consideration of the incubation period of the experimental disease, indicate that the period of incubation in man varies from ten to eighteen days, averaging fourteen days. It is also inferred that the time of greatest infectiousness of infantile paralysis is probably at the beginning, or within the first three or four days of the acute stage of the disease. This study suggests that the search for the source of infection should be centered at about the fourteenth day before the onset of acute symptoms.

Multiple Cases of Measles, Scarlet Fever and Infantile Paralysis.—The data presented by Aycock and Eaton show that secondary cases of measles usually occur from ten to twelve days after the onset of the initial case in the family, and that third cases occur, as a rule, simultaneously with the second cases. This indicates that the majority of multiple cases are derived from the initial case. Since the interval between the initial case and subsequent cases corresponds to the incubation period of the disease, it may be stated that multiple cases, as a rule, are contracted from the initial case at about the time of its onset. Scarlet fever acts similarly, except that, the period of incubation being short, secondary cases overlap common source cases, making analyses of the curve more difficult. Unlike measles, scarlet fever has a relatively large number of late secondary cases, doubtless due to a prolonged period of infectivity. It thus appears that measles and scarlet fever are both introduced into the family by the initial case from which, after the onset of the disease, the infection is transmitted to other members of the family. In the majority of instances, particularly in measles, the virus is transmitted to other members of the family simultaneously very near the time of onset of the initial case. In other words, the initial case of measles or scarlet fever may be considered as the source of the family outbreak. Infantile paralysis, when introduced into a family, acts quite differently from measles or scarlet fever. Only exceptionally do multiple cases occur. When multiple cases do occur, it is usually within a short time of each other, indicating simultaneous infection. In this respect, multiple cases of infantile paralysis resemble second and third cases of measles. This indicates that contact infection during the acute stage does not play the same rôle in this disease as in measles or scarlet fever, but that the virus of infantile paralysis enters the family in such a way that in the few instances where more than one member is infected, this is accomplished practically simultaneously.

Relation Between Physical Condition and Natural Resistance to Infection.—The evidence presented by Spaeth suggests that the increase in natural resistance to infection, following forced exercise to exhaustion, cannot be correlated with the good physical condition of the exhausted animals. Guinea-pigs, on a reduced diet, that have suffered a weight loss equivalent to the weight lost by forced running, resist intraperitoneal infections of type 1 pneumococcus better than do normally fed guinea-pigs. Young starved guinea-pigs (from 150 to 300 gm.) and exhausted guinea-pigs of similar weight are physiologically comparable in so far as both groups, when infected with type 1 pneumococcus and fed immediately thereafter, resist infection better than do normally fed control guinea-pigs. The starvation experiments indicate that in exhausted guinea-pigs increased resistance to infection is, in some at present unexplained way, related to the weight recovery process and has nothing to do with fatigue nor with fatigue products. The greater resistance to infection of both starved and exhausted animals (guinea-pigs) suggests that natural resistance is in no sense a static matter, but is, in part, at least, a function of anabolic rate.

American Journal of Obstetrics and Gynecology, St. Louis

10: 619 764 (Nov.) 1925

*Perforating Ovarian Cysts (Sampson's) with Invasion of Bladder Wall; Two Cases F. E Keene, Philadelphia —p 619

Adenomas of Endometrial Origin in Laparotomy Scars Following Incision of Pregnant Uterus; Two Cases. N. S. Heaney, Chicago —p 625.

Adenomyoma of Abdominal Wall. W. C. Danforth, Evanston, Ill.—p 630.

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Spontaneous Intra Uterine Amputations J S Latta, Omaha —p. 640.

*Heterotopic or Misplaced Endometrial Tissue. J. A. Sampson, Albany, N Y.—p. 649.

*Relationship of Ectopic Adenomyomas to Ovarian Function. W. P. Graves, Boston —p 665.

Inversion of Uterus After Childbirth, Case. H. N. Mason and M P. Rucker, Richmond, Va —p 671.

*Adenomyosis Uteri. O Frankl, Vienna, Austria —p. 680.

*Malignant Ovarian Neoplasms. C C. Norris and M. E Vogt, Philadelphia.—p 684

Pantopon Scopolamin Seminarcosis in Labor. P J. Carter, New Orleans. —p 693.

New Explanation for Occurrence of Eclampsia in Pregnancy. H. Elwyn, New York —p 698

*Treatment of Umbilical Cord by Short Ligation and Use of a Clamp. J F Dicks, New Orleans —p 706

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Case of Uterus Didelphys W A. Malcolm, Peoria, Ill —p 712.

*New Maneuver in Abdominal Palpation C O McCormick, Indianapolis —p 714

Spontaneous Rupture of Sarcoma of Ovary; Case. H. Koster, Brooklyn. —p 716

Analysis of Work of Obstetric Clinic of Johns Hopkins Hospital for 1924. Schema for Ready Indexing of Obstetric Records. E. L. Stone and W E Sisson, Baltimore —p 718 at its meeting here a physical examination as it should be done completely, so they can talk physical examinations to their people the same as we talk dental examination to our people. Our work is not to give service which runs into the hundreds of millions to those who can afford to pay for this service, but only to get the people as a whole to thinking periodic health examinations. When such examinations are done by the medical profession, then all defects should be referred back to the family physician and not to lay clinics for correction.

DR. J. M. DODSON, Chicago: I like to think of the time when every medical man, every practitioner will think he is a constituent and integral part of the health department of the state. We are fortunate in having here the commissioner of health of Connecticut.

Education of the Laity by Departments of Public Health

DR. STANLEY H. OSBORN, Hartford, Conn.: The keynote of the state department of health of Connecticut is to make the physicians and the general practitioners realize they are a part of the public health program. The Connecticut state department of health is in closer contact with physicians at the present time than ever in the past. We have attempted to stear clear of anything that would suggest state medicine, and the opposite, of course, is to tell the physician everything we are doing. The result has been that the Connecticut state medical society has a special committee appointed to work with the state department of health.

We are selling periodic health examinations in Connecticut just exactly the way any commercial firm goes about selling a commodity; that is, using the old axiom of supply and demand. If we can make a demand on physicians for health examinations, we shall not have to worry whether the physician today knows how to do those examinations or not. We are attempting in two ways to foster the periodic health examination movement, one of which is modestly and without any head lines to inform the physician (it could not be called educating the physician) that there is such a movement under way, and try to show to him through talks at the county and state meetings the fact that he is quite a factor in this particular public health movement. The other is stimulating the people in any way we can to show them the value of it, and then they will go to the physician and ask for such an examination. We are trying to stimulate the demand for such examinations by the usual things: talks, pamphlets, leaflets, radio, films, everything under the sun; and in every little place: church meetings, town meetings, welfare meetings, anything at all that will be stimulating to the public. We have issued in Connecticut periodic health examination blank. This blank of ours is in duplicate, so that a carbon can be put between. We had to get something which would not seem too severe to start with. We felt that the American Medical Association blank was ideal to work for and perhaps elaborate later on.

As for results, we are having come into the office innumerable requests for these blanks, twenty-fives and fifties. We have had several requests from physicians for 500 copies. We furnished them at cost. The health examination work is going ahead with leaps and bounds. We are going to issue to each physician in the state a little manual that the American Medical Association has just gotten out. The material is wanted and it is being talked about now. They are going to read it or use it, whereas six months or a year from now they would not look at it half so much. It is not the splurge once a year that is going to have half the effect that the constant hammering, month by month, will have, and the ways of doing that are through leaflets, weekly health bulletins, pamphlets and the radio.

DR. J. M. DODSON, Chicago: Dr. D. Chester Brown, of the Board of Trustees of the American Medical Association, in charge of the Committee on Scientific Exhibits, has an announcement to make.

DR. D. CHESTER BROWN, Danbury, Conn.: The Committee on Scientific Exhibits has under consideration the construction of films or slides relative to making these examinations to interest the general practitioner. When that is accomplished, they will be used for the scientific exhibit first and then they will be lent or rented to the various constituent organizations of the American Medical Association.

DR. J. M. DODSON, Chicago: The subject is open for general discussion.

DR. I. D. RAWLINGS, Springfield, Ill.: We have tried to promote this demand for the health examinations. We have used the newspaper releases each week to 200 newspapers in the state, a weekly bulletin on some live subject, and in almost all of these, or in many of them, we are able to stress the annual physical examination in a line or two. We send out healthgrams. This often has an item on the annual physical examination. We had health films. For a number of years we have had better baby conferences at Springfield and the fifty or sixty state fairs. We have a monthly publication that goes to 20,000 people in the state, our *Health News*, and in that we have frequent publicity for education and for publicity of the physical examination. In our work down state we found first we had difficulty in getting the cooperation of the physicians. Instead of going to the state secretary, as we should have done, we went to societies favoring this sort of work and we did not get the cooperation we would have gotten otherwise. In the last two years the county medical society has cooperated with us wonderfully. We are hoping that all this will be taken over by them, at least all the medical part of the examinations.

DR. H. E. DEARHOLT, Milwaukee: The question has come through this whole conference, Who is going to pay? I think that a good way to pay, probably the best way, is for the public to make its contributions to some lay organization, some lay medical health organization, and then the physical examinations given by that organization shall be free. The whole thing is a matter of salesmanship. Free demonstration has had an enormous amount to do with the popularity of the automobile. If we could look beyond the immediate dollar to the ultimate dollar, we should not have so much question about who is going to pay.

DR. J. M. DODSON, Chicago: I did want to call attention to one serious danger in the manner in which these examinations are conducted at expositions. They are conducted by a group of specialists. It is teaching the public absolutely the wrong thing, for that is not the way these examinations can be conducted if they become general. We are doing a similar thing in our medical schools today. Every patient entering a dispensary or a hospital ought first to be examined thoroughly from top to toe by a general practitioner or his equivalent, and then when it is discovered that he belongs in a particular department, he should be referred there. Yet, in practically all the outpatient departments of our medical schools, our students are being taught in a way which emphasizes the necessity of specialism. That is one reason why we are not graduating any more general practitioners.

DR. E. B. EDIE, Uniontown, Pa.: My topic was the education of the laity by newspapers and magazines. Those are national affairs and I had to take it in a national way. It seemed to me that there would have to be some national headquarters to do that work. I suggested a more or less professional publicity man. Since getting here, I think we have those men. I do not see why we should not have a separate organization with an interlocking director, which could take money from wealthy persons to carry out health conservation service. I suggested that we also have men in the profession who could do this thing in a big way. We have them right here. You have got the idea that I was saying that the general practitioner could not do these examinations. He can do the physical examination. I hope this thing is going to lead to a state where we are going to pick up the early things, which are largely focal infections. The general practitioner is not capable at this time of doing these examinations without help. As to the young man going into medicine, service is a religion now. This is the greatest service in the world.

DR. J. M. DODSON, Chicago: We hope that you will keep us informed as to any new methods of getting the general practitioners interested in this matter and educating them for this service so we may use that information to help other groups who are seeking the same end.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Electrotherapeutics and Radiology, New York

93: 399-438 (Nov.) 1925

Physiotherapy Department and Hospital. A. B. Hirsh and R. Kovacs, New York.—p. 399.
Laboratory Methods in Teaching of Physical Therapeutics. W. H. MacCraken, Detroit.—p. 404.
Facts and Fallacies of Physical Therapy. M. Fishbein, Chicago.—p. 407.
Why We Use the Static Current. W. B. Snow, New York.—p. 412.

American Journal of Hygiene, Baltimore

5: 709-858 (Nov.) 1925

*Changes in Intestinal Flora of Rats on Calcium Deficient Diet. R. E. Hoffstadt and S. J. Johnson, Seattle.—p. 709.
*Epidemiology of Infantile Paralysis. Relation Between Multiple Cases in Same Family. W. L. Aycock and P. Eaton, Boston.—p. 724.
*Comparison Between Multiple Cases of Measles, Scarlet Fever and Infantile Paralysis. W. L. Aycock and P. Eaton, Boston.—p. 733.
Infection and Resistance in Bird Malaria; Periodicity and Rate of Reproduction of Parasite. L. G. Taliaferro, Baltimore.—p. 742.
Factors That Influence Rate of Increase of Hookworm Infection. W. A. Sawyer, Baltimore.—p. 790.
Influence of Certain Experimental Factors on Course of Infections with Plasmodium Praecox. G. H. Boyd, Baltimore.—p. 818.
*Experimental Investigation of Supposed Relation Between Good Physical Condition and Natural Resistance to Infection. R. A. Spaeth, Baltimore.—p. 839.

Effect of Calcium Deficient Diet on Intestinal Flora.—The observation made by Hoffstadt and Johnson shows that a calcium deficient diet causes definite constipation and lowers the aerobic bacterial count. Probably neither aerobic nor anaerobic bacteria cause the constipation. A calcium deficient diet caused the collapse of the small intestine with an apparent thinning of the wall.

Epidemiology of Infantile Paralysis.—The time interval between cases of multiple infantile paralysis in 253 families has been studied by Aycock and Eaton. The diagnosis of abortive cases of infantile paralysis is influenced to such an extent by the presence of cases showing paralysis in the same family that their inclusion gives an erroneous impression of the interval between multiple cases. A study of cases showing multiple paralysis indicates that a large proportion of so-called secondary cases arise from a common source with their respective primary cases. The much smaller proportion of cases presenting secondary paralysis in the same family, which occurred from ten to eighteen days, averaging fourteen days, after the primary cases, are regarded as probable true secondary cases. These findings, in connection with a consideration of the incubation period of the experimental disease, indicate that the period of incubation in man varies from ten to eighteen days, averaging fourteen days. It is also inferred that the time of greatest infectiousness of infantile paralysis is probably at the beginning, or within the first three or four days of the acute stage of the disease. This study suggests that the search for the source of infection should be centered at about the fourteenth day before the onset of acute symptoms.

Multiple Cases of Measles, Scarlet Fever and Infantile Paralysis.—The data presented by Aycock and Eaton show that secondary cases of measles usually occur from ten to twelve days after the onset of the initial case in the family, and that third cases occur, as a rule, simultaneously with the second cases. This indicates that the majority of multiple cases are derived from the initial case. Since the interval between the initial case and subsequent cases corresponds to the incubation period of the disease, it may be stated that multiple cases, as a rule, are contracted from the initial case at about the time of its onset. Scarlet fever acts similarly, except that, the period of incubation being short, secondary cases overlap common source cases, making analyses of the curve more difficult. Unlike measles, scarlet fever has a relatively large number of late secondary cases, doubtless due to a prolonged period of infectivity. It thus appears that measles and scarlet fever are both introduced into the family by the initial case from which, after the onset of the disease, the infection is transmitted to other members of the family. In the majority of instances, particularly in measles, the virus is transmitted to other members of the family simultaneously very near the time of onset of the initial case. In other words, the initial case of measles or scarlet fever may be considered as the source of the family outbreak. Infantile paralysis, when introduced into a family, acts quite differently from measles or scarlet fever. Only exceptionally do multiple cases occur. When multiple cases do occur, it is usually within a short time of each other, indicating simultaneous infection. In this respect, multiple cases of infantile paralysis resemble second and third cases of measles. This indicates that contact infection during the acute stage does not play the same rôle in this disease as in measles or scarlet fever, but that the virus of infantile paralysis enters the family in such a way that in the few instances where more than one member is infected, this is accomplished practically simultaneously.

Relation Between Physical Condition and Natural Resistance to Infection.—The evidence presented by Spaeth suggests that the increase in natural resistance to infection, following forced exercise to exhaustion, cannot be correlated with the good physical condition of the exhausted animals. Guinea-pigs, on a reduced diet, that have suffered a weight loss equivalent to the weight lost by forced running, resist intraperitoneal infections of type 1 pneumococcus better than do normally fed guinea-pigs. Young starved guinea-pigs (from 150 to 300 gm.) and exhausted guinea-pigs of similar weight are physiologically comparable in so far as both groups, when infected with type 1 pneumococcus and fed immediately thereafter, resist infection better than do normally fed control guinea-pigs. The starvation experiments indicate that in exhausted guinea-pigs increased resistance to infection is, in some at present unexplained way, related to the weight recovery process and has nothing to do with fatigue nor with fatigue products. The greater resistance to infection of both starved and exhausted animals (guinea-pigs) suggests that natural resistance is in no sense a static matter, but is, in part, at least, a function of anabolic rate.

American Journal of Obstetrics and Gynecology, St. Louis

10: 619-764 (Nov.) 1925

*Perforating Ovarian Cysts (Sampson's) with Invasion of Bladder Wall; Two Cases. F. E. Keene, Philadelphia.—p. 619.
Adenomas of Endometrial Origin in Laparotomy Scars Following Incision of Pregnant Uterus; Two Cases. N. S. Heaney, Chicago.—p. 625.
Adenomyoma of Abdominal Wall. W. C. Danforth, Evanston, Ill.—p. 630.
Syphiloma Vulvae; Case. A. Stein, New York.—p. 633.
Spontaneous Intra-Uterine Amputations. J. S. Latta, Omaha.—p. 640.
*Heterotopic or Misplaced Endometrial Tissue. J. A. Sampson, Albany, N. Y.—p. 649.
*Relationship of Ectopic Adenomyomas to Ovarian Function. W. P. Graves, Boston.—p. 665.
Inversion of Uterus After Childbirth; Case. H. N. Mason and M. P. Rucker, Richmond, Va.—p. 671.
*Adenomyosis Uteri. O. Frankl, Vienna, Austria.—p. 680.
*Malignant Ovarian Neoplasms. C. C. Norris and M. E. Vogt, Philadelphia.—p. 684.
Pantopon Scopolamin Seminarcosis in Labor. P. J. Carter, New Orleans.—p. 693.
New Explanation for Occurrence of Eclampsia in Pregnancy. H. Elwyn, New York.—p. 698.
*Treatment of Umbilical Cord by Short Ligation and Use of a Clamp. J. F. Dicks, New Orleans.—p. 706.
Case of Inguinal Hernia Complicated by Hernia of Ovaries and Tubes. W. N. Rowley, Huntington, W. Va.—p. 709.
Case of Uterus Didelphys. W. A. Malcolm, Peoria, Ill.—p. 712.
*New Maneuver in Abdominal Palpation. C. O. McCormick, Indianapolis.—p. 714.
Spontaneous Rupture of Sarcoma of Ovary; Case. H. Koster, Brooklyn.—p. 716.
Analysis of Work of Obstetric Clinic of Johns Hopkins Hospital for 1924: Schema for Ready Indexing of Obstetric Records. E. L. Stone and W. E. Sisson, Baltimore.—p. 718.

Endometrial Invasion of Bladder Wall.—In two cases reported by Keene, intense bladder symptoms were produced by endometrial invasion of the bladder wall, secondary to endometrial cysts of the ovary. Prior to operation, the exact nature of the lesion was determined by exclusion of inflammatory neoplastic lesions of the kidney and bladder and by the more or less typical cystoscopic picture in each case. Unless the possibility of such a lesion is borne in mind, it might readily be mistaken for a malignant tumor. Relief of the symptoms and restoration of the bladder to normal followed on removal of both ovaries, showing that excision of the affected area in the bladder is unnecessary.

Misplaced Endometrial Tissue.—Sampson asserts that the invasion and dissemination of benign endometrial tissue employ the same channels as the invasion and dissemination of cancer.

Ectopic Adenomyoma and Ovarian Function.—Graves does not subscribe to the sweeping statement that ectopic adenomyomas do not retrograde after removal of the ovaries, nor does he feel justified in making a general statement to the contrary. But he is convinced that in the majority of cases the endometriomas may be counted on to atrophy in the absence of ovarian function and that this probability in their behavior is a valuable guide to treatment in cases like those of rectovaginal adenomyomas in which a radical operation would greatly mutilate the patient or seriously injure her for life.

Adenomyosis Uteri.—This term means the penetration of the uterine mucosa, of both the glandular epithelium and its surrounding stroma, into the myometrium. The entire material seen by Frankl taken from thirty cases showed in twelve instances the presence of myomas, mostly of very small size. Eleven times he found the mucosa in a hyperplastic condition. Coincidently, he found in one case a carcinoma of the ovary, once an ovarian cyst, four times an inflammatory process of the adnexa, and once a carcinoma of the cervix.

Malignant Tumors of Ovary.—In a series of 1,028 ovarian neoplasms reviewed by Norris and Vogt, 11 per cent were malignant. Twenty-three per cent of the glandular adenocarcinomatous patients were alive three years or more after operation, as against 70 per cent of the papillary adenocarcinoma cases. In almost 60 per cent of the cases that appear favorable at operation, the patients survive three years.

Clamping Umbilical Cord.—Dicks favors the use of a clamp for two reasons: It does away with the danger of a slipping ligature and consequent infection, and when the cord is clamped close to the skin, early detachment is favored, thereby minimizing the danger of infection and consequent umbilical hernia.

Palpation of Fetus in Abdomen.—In the method described by McCormick, the patient is placed on an examining table, and the abdomen exposed as for abdominal palpation. The examiner stands to her right facing her, and with his right hand assuming a "C" grasp, he places the end of his extended right thumb perpendicularly to the umbilicus, and firmly, though gently, depresses it. He then applies the "C" grasp, composed on the palmar surface of the thumb, radial palm and first two or three fingers, to the left part of the patient's abdomen along the transverse plane passing through the umbilicus. The ends of the fingers should go as far back on the loin as their extent will comfortably allow. After a few seconds' effort in noting whether he has the firm round smooth body of the baby within his grasp, or whether it contains soft, irregular, or indefinite parts, he releases the grasp, and still holding his thumb against the depressed umbilicus, pivots the palm and fingers 180 degrees counterclockwise, and reapplies a similar grasp to the right part of the abdomen along the same transverse plane. Then for comparison, he makes the same notations on the parts grasped as were made on the left. The maneuver is primarily recommended as a substitute for the classic second maneuver; namely, that of palpating the sides of the uterus with the entire palmar surface of both hands. It is applicable with the fetus lying in the longitudinal axis, but it is of equal value in transverse or oblique presentations by using the same technic, except applying the grasp first below and then above the umbilicus along the longitudinal plane. It is likewise applicable in cases of multiple pregnancy. The maneuver is practical only after seven months' gestation, because the umbilicus is then somewhere near the center of the so-called "fetal triangle."

Archives of Internal Medicine, Chicago

36: 593-750 (Nov. 15) 1925

*Peripheral Pulsations in Veins in Congestive Failure of Heart, Associated with Pulsation of Liver and Tricuspid Regurgitation. W. J. Kerr and S. L. Warren, San Francisco.—p. 593.

*Effect of Changes in Position of Heart on Q-R-S Complex of Electrocardiogram. W. J. Meek and A. Wilson, Madison, Wis.—p. 614.

Vital Capacity, Respiratory Frequency, Pulse Rate and Systolic Blood Pressure in Heart Disease. H. W. Schmitz, New York.—p. 628.

Clinical Diagnosis and Intestinal Flora. H. Tsuchiya, Battle Creek, Mich.—p. 636.

*Defects of Membranous Bones, Exophthalmos and Diabetes Insipidus; Case with Necropsy. C. Q. Thompson, J. J. Keegan and A. D. Dunn, Omaha.—p. 650.

*Lipemia and Reticulo-Endothelial Apparatus. B. S. Oppenheimer and A. M. Fishberg, New York.—p. 667.

*Renal Injuries by Amino-Acids. L. H. Newburgh and P. L. Marsh, Ann Arbor, Mich.—p. 682.

*Auricular Wave (P) of Electrocardiogram; Pulmonic and Mitral Stenosis. A. A. Alexander, Oakland, Calif.; H. F. Knight, Rochester, N. Y., and P. D. White, Boston.—p. 712.

Action of Paraphenylendiamin. K. W. Dewey, Chicago.—p. 724.

Intermittent Auricular Fibrillation; with Fleeting Rapidly Recurring Paroxysms Having Identical Type of Auricular Behavior. C. C. Wolferth, Philadelphia.—p. 735.

*Roentgen-Ray Treatment of Spleen in Asthma Bronchiale. G. L. Waldbott, Detroit.—p. 743.

Nonspecific Protein Reaction. F. B. Seibert, Chicago.—p. 747.

Pulsation in Peripheral Veins in Heart Failure.—Pulsations in the peripheral veins, especially in the basilic veins of the arms, are suggested by Kerr and Warren as an early and valuable sign in detecting the presence of myocardial or congestive heart failure together with a relative tricuspid insufficiency. Their magnitude interprets the degree of myocardial and tricuspid incompetence. Their appearance in cases of marked decompensation suggests a bad prognosis.

Position of Heart for Electrocardiographic Study.—The importance of having the heart in the normal position for all electrocardiograms is emphasized by Meek and Wilson. It seems clear that it is impossible to tell how much a change in position may affect the electrocardiogram or how much an abnormal electrocardiogram may be the result of variations in position, since the outcome is due to the summation of different rotations. Variations in position may accentuate, neutralize or reverse the effects of a slight degree of hypertrophy. It is for this reason that, as Herrmann and Wilson insist, the influence of the relative weight of the two ventricles predominates only when the heart is greatly hypertrophied.

Defects of Membranous Bones and Diabetes Insipidus.—In a case of defects in membranous bones, exophthalmos and diabetes insipidus studied clinically and pathologically by Thompson et al., dyspituitarism as a cause for the syndrome was excluded by the absence of material pathologic changes in the hypophysis. Pathologic support was given to current work on experimental polyuria which puts the lesions of diabetes insipidus in the hypothalamus. From clinical behavior and from pathologic findings, an infectious etiology seemed more likely than a primary metabolic (endocrinologic) disturbance.

Lipemia and Reticulo-Endothelial Apparatus.—A case of diabetic lipemia is described by Oppenheimer and Fishberg in which the lipoid storage is manifested by almost complete replacement of the splenic pulp by large foam cells, marked deposition of lipoid in the enlarged Kupffer cells, and yellow patches in the intima of the aorta and the endocardium composed of foam cells.

Renal Injuries by Amino-Acids.—It is demonstrated by Newburgh and Marsh that the amino-acids arginine aspartic acid, lysine, histidine, tyrosine, tryptophane and cystine are nephrotoxic.

Auricular Wave of Electrocardiogram.—A study has been made by Alexander et al. of 132 patients who have shown by electrocardiograms auricular or P waves greater than 0.1 millivolt (1 mm.) in amplitude in lead I or equal to or greater than 0.3 millivolt (3 mm.) in lead II. Of these cases nineteen showed definite congenital pulmonic stenosis; three showed doubtful congenital pulmonic stenosis; seventy-two, definite mitral stenosis; six, doubtful mitral stenosis; two, probable interventricular septal defect, and eighteen, stenosis or congenital heart defects—a total of 120, or 91 per cent, of the 132 cases. Only twelve cases are not readily accounted for. Ten of these patients had hypertension with or without nephritis, not included in previous groups. Of 100 unselected consecutive patients with mitral stenosis, fifty-eight had normal rhythm. Forty-two showed auricular fibrillation. Of the fifty-eight cases with normal rhythm, forty-nine showed either an abnormally large P_1, P_2 or both.

Roentgen-Ray Irradiation of Spleen in Asthma Bronchiale.—A boy, aged 6½ years, was treated by Waldbott with a small dose of roentgen ray over the spleen. He has been entirely relieved from the clinical manifestations of this disease.

Boston Medical and Surgical Journal

193: 1045-1084 (Dec. 3) 1925

Management of Obstructive Jaundice as Factor Affecting Surgical Risk. J. P. Bowler, Manchester, N. H.—p. 1045.
*Liver Function. III. Methods for Determining Furfurol Number and Bilirubin Concentration of Duodenal Contents. C. W. McClure, M. E. Huntsinger and O. C. Montague, Boston.—p. 1050.
*Id. IV. Procedure for Uniform Stimulation of Biliary Flow. C. W. McClure, W. L. Mendenhall and M. E. Huntsinger, Boston.—p. 1052.
*Id. V. Disturbed Liver Functions. C. W. McClure, M. E. Huntsinger and J. Gottlieb, Boston.—p. 1054.
Dramatic Story of New Harvard Medical School. F. C. Shattuck, Boston.—p. 1058.

Bilirubin Concentration of Duodenal Contents.—McClure, Huntsinger and Montague describe a method for estimating the bilirubin found in duodenal contents, and also a simplification of the bile acid method previously described.

Stimulation of Biliary Flow.—Oleic acid has been found by McClure, Mendenhall and Huntsinger to be a uniform stimulant to the flow of bile in both normal man and animals. The results obtained by the study of normal human duodenal contents after stimulation of the flow of bile by oleic acid or by magnesium sulphate solution have been found to be similar. In all, eighteen subjects have been studied, which is considered to afford sufficient data to establish the character of normal duodenal contents obtained after the use of oleic acid. A series of animal experiments substantiate completely this conclusion. The findings show that the examination of duodenal contents as described furnishes a fairly delicate index of the state of liver function.

Disturbed Liver Function.—McClure et al. state that there exists a group of patients presenting the symptoms commonly ascribed to cholecystitis, a group with return of symptoms after cholecystotomy or cholecystectomy, and another group complaining of gastro-intestinal symptoms not characteristic of any particular clinical entity. The three groups are characterized by an abnormal state of liver function, as demonstrated by examination of the duodenal bile. The symptoms presented by the three groups of patients are frequently relieved during or following intraduodenal therapy. Relief from or amelioration of symptoms is accompanied by, or followed by, improvement in the state of liver function, as demonstrated by examination of duodenal bile. Evaluation of disturbed liver function, and its treatment when found, are worthy of consideration in patients presenting the symptoms of cholecystitis, provided the surgical condition of the patient warrants procrastination. Evaluation of the state of liver function is worthy of consideration in ulcer patients who are not progressing satisfactorily, in patients who present unexplained gastro-intestinal symptoms, and before making the diagnosis of a gastro-intestinal neurosis.

Endocrinology, Los Angeles

9: 265-352 (July-Aug.) 1925

*Roentgenographic Study of Sella Turcica in Abnormal Children. M. B. Gordon and A. L. L. Bell, Brooklyn.—p. 265.
*Studies on Vigor. IV. Effect of Testicle Grafts on Spontaneous Activity. R. G. Hoskins, Columbus, Ohio.—p. 277.
*Interglandular Associations. F. S. Hammett, Philadelphia.—p. 297.
Surgery of Glands of Internal Secretion. G. W. Crile, Cleveland.—p. 301.

Form of Sella Turcica in Children.—Roentgenographic studies were made by Gordon and Bell of the contours of the sella turcica in sixty-four abnormal children. The findings were compared with those of 104 normal children. It was found that the shape of the sella does not differ significantly in normal and abnormal children. The type of disorder is not correlated with the shape of the sella. Round and oval shapes predominate in both abnormal and normal children, and flat sellas are the least frequent. The formation of the sella does not differ in abnormal children from that in normal children. There is no formation characteristic of any individual disease. The excavation that has been described in mongolian idiots is extrasellar. It may be uncovered or covered by the lesser wings of the sphenoid. It is a normal formation found with the same frequency in all children and is not characteristic of any known disorder. The size of the sella is not influenced by any of the diseases studied. As in the normal series, no relationship was found between the size of the sella and the size of the head, nor between the shape of the sella and the shape of the head.

Effect of Testicular Transplantation.—Hoskins says that in fifteen experiments with castrated rats and three with senile subjects, testicular grafts consistently failed to bring about any significant improvement of activity.

Interglandular Associations.—In Hammett's opinion it is probable that the glands of internal secretion, as a group, are no more directly and specifically interrelated in function than they are in size.

Florida Medical Association Journal, Jacksonville

12: 123-146 (Nov.) 1925

Case of Intestinal Obstruction. L. J. Efird, Tampa.—p. 123.
Clinical Aspects of Adenomyoma. W. M. Jordan, Miami.—p. 124.
Drinking Water with Meals a Potential Aid to Digestion. G. M. Niles, Atlanta, Ga.—p. 127.
Individual Delinquency. G. H. Benton, Miami.—p. 129.
Ovarian Tumors in Childhood; Case of Large Ovarian Cyst, with Twisted Pedicle, Simulating Pregnancy, in Child Aged Ten Years. W. W. Massey, Quincy.—p. 130.
Myocardial Dysfunction. W. C. McConnell, Chattahoochee.—p. 132.
Looking Backward Over Fifty Years of Health Work in Florida. J. Y. Porter, Key West.—p. 134.

Indiana State Medical Association Journal, Ft. Wayne

18: 407-444 (Nov. 15) 1925

*Physical Therapy. C. P. Emerson, Indianapolis.—p. 407.
Blood Chemistry. B. W. Rhamy, Fort Wayne.—p. 412.
Some Problems in Medical Economics. M. L. Harris, Chicago.—p. 416.
*Rocky Mountain Spotted Fever in Indiana; Report of Case. C. R. LaBier, Terre Haute.—p. 418.

Physical Therapy.—For some of the common diseases which physicians are called on to treat, Emerson asserts, physical therapies are the best treatments of all, and in the treatment of many others they are helpful. The regular medical profession has neglected seriously these forms of therapy, and as a result poorly trained men have profited greatly. Certain physical therapies have established themselves in regular practice with very little opposition. Roentgenotherapy is one, for illustration, and those therapies which under the term physical reconstruction reached such prestige during the war. Among the various physical treatments which Emerson has known to be helpful in functional cases of backache are: calisthenic movements; deep massage of the back and its mechanical equivalent, the vibrator; heat in almost any form; a little physical support, such as is given by surgeons' adhesive plaster; and static electricity, a rather long spark gap being used. Other useful measures for indicated cases are: active and passive movements; hydrotherapy; the Nauheim bath for myocarditis; ultraviolet ray; diathermy; faradic and galvanic currents; sinusoidal treatment in cases of chronic constipation and conditions of abdominal atony; high frequency in cases of arterial hypertension; reeducational therapy. Physical therapy of all forms requires organization; it means apparatus; it means technical workers who know how to use the machine skilfully under supervision. No therapy is, because of any quality within itself, a quackery. All depends on the man who administers it. The great good that can be obtained in no other way than from physical therapy should be used for the patient and not exploited by the untrained.

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Closed and Open Method in Suprapubic Prostatectomy. H. A. Springer, Cincinnati.—p. 916.

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Hieronymus Fracastorius: His Works on Syphilis. W. R. Riddell. —p. 501.
Generalized Public Health Nursing. F. H. M. Emory.—p. 509.
*Scarlet Fever Immunization: Its Effect on an Epidemic. J. Miller. —p. 517.
Hospital as Public Health Center. R. E. Wodehouse.—p. 519.
Prevention of Diphtheria and Scarlet Fever. A. L. McKay and D. T. Fraser.—p. 521.

Results of Scarlet Fever Immunization.—Scarlet fever has been endemic in Kingston for the last four years. It is estimated that 2,000 children of school age have had scarlet fever during that period. The disease varied greatly in virulence. In 1922 and 1923, many cases were so mild that they escaped medical attention entirely. It is noteworthy, however, that over 2 per cent of admissions to the City Isolation Hospital for scarlet fever terminated in death. The situation became more serious during January and February, 1925, when there was approximately one case per diem reported to the medical health officer. Inoculation was begun, February 24. In all, 1,155 children were inoculated, and in not one case was a severe reaction reported. The immunization of the nursing staff of both hospitals was also undertaken. It was soon found that the reaction in the case of adults tended to be much more severe. Three nurses developed pronounced scarlet-like rashes, with elevated temperature and malaise. The number of cases decreased immediately on the commencement of inoculation.

South Carolina Medical Association Journal, Greenville

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Ultraviolet Rays. W. Wilkinson, Phoenix, Ariz.—p. 421.
Life Extension. G. S. Luckett, Santa Fe, N. M.—p. 430.
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Dacryocystorhinoplasty: Mosher's Modification of Toti Method. S. B. Cowen, Cleveland.—p. 902.
Hemorrhage in Pregnancy, Labor or Puerperium due to Rupture of Uterus, Tumors or Carcinoma. W. D. Porter, Cincinnati.—p. 905.
Psychiatric Study of Summit County, Ohio. J. C. Hassall, Cuyahoga Falls.—p. 909.
Medical Inspection of Rural Schools. C. E. Huston, Paulding.—p. 916.
Closed and Open Method in Suprapubic Prostatectomy. H. A. Springer, Cincinnati.—p. 916.

Public Health Journal, Toronto

16: 501-550 (Nov.) 1925

Hieronymus Fracastorius: His Works on Syphilis. W. R. Riddell. —p. 501.
Generalized Public Health Nursing. F. H. M. Emory.—p. 509.
*Scarlet Fever Immunization: Its Effect on an Epidemic. J. Miller. —p. 517.
Hospital as Public Health Center. R. E. Wodehouse.—p. 519.
Prevention of Diphtheria and Scarlet Fever. A. L. McKay and D. T. Fraser.—p. 521.

Results of Scarlet Fever Immunization.—Scarlet fever has been endemic in Kingston for the last four years. It is estimated that 2,000 children of school age have had scarlet fever during that period. The disease varied greatly in virulence. In 1922 and 1923, many cases were so mild that they escaped medical attention entirely. It is noteworthy, however, that over 2 per cent of admissions to the City Isolation Hospital for scarlet fever terminated in death. The situation became more serious during January and February, 1925, when there was approximately one case per diem reported to the medical health officer. Inoculation was begun, February 24. In all, 1,155 children were inoculated, and in not one case was a severe reaction reported. The immunization of the nursing staff of both hospitals was also undertaken. It was soon found that the reaction in the case of adults tended to be much more severe. Three nurses developed pronounced scarlet-like rashes, with elevated temperature and malaise. The number of cases decreased immediately on the commencement of inoculation.

South Carolina Medical Association Journal, Greenville

21: 259-286 (Nov.) 1925

Roentgen-Ray and Radium Treatment of Cancer. F. D. Rodgers, Columbia.—p. 260.
Diphtheria. M. W. Beach, Charleston.—p. 264.
Obstetric Analgesia. J. D. Guess, Greenville.—p. 267.

Southwestern Medicine, Phoenix, Ariz.

9: 415-456 (Nov.) 1925

Roentgen-Ray Study of Right Upper Quadrant Lesions. P. R. Casellas, El Paso, Texas.—p. 415.
Fractures of Elbow. E. J. Cummins, El Paso, Texas.—p. 418.
Ultraviolet Rays. W. Wilkinson, Phoenix, Ariz.—p. 421.
Life Extension. G. S. Luckett, Santa Fe, N. M.—p. 430.
Medical and Dental Officers Reserve Corps. W. R. Jamieson, El Paso, Texas.—p. 431.

Tennessee State Medical Association Journal, Nashville

18: 151-184 (Oct.) 1925

Parathyroid Therapy in Spastic States. W. K. Sheddan, Columbia. —p. 151.
Some Preoperative Factors Influencing Mortality of Prostatectomy. J. E. Hall, Nashville.—p. 156.
Status of Prostatectomy. L. B. West, Chattanooga.—p. 160.
Esophagoscope as Aid in Diagnosis. R. McKinney, Memphis.—p. 169.
First Aid to Injured Eyes. D. Potter, Nashville.—p. 171.
Crippled Hand in Childhood. J. C. Burch, Nashville.—p. 174.
Traumatic Synovitis of Knee. H. Cox, Nashville.—p. 178.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

13: 201-404 (Oct.) 1925

XVIII. Bryant's Iliofemoral Triangle. D. Power.—p. 201.
*Osteitis Deformans (Paget's Disease); Relation to Osteitis Fibrosa and Osteomalacia. R. L. Knaggs.—p. 206.
*Two Cases of Cystadenoma of Pancreas; Probable Relationship to Polycystic Conditions Found in Other Viscera. E. R. Carling and J. A. B. Hicks.—p. 238.
Pathology of Hydronephrosis. H. P. W. White.—p. 247.
Tumors of Testicle; Spermatocytoma Group. F. G. Bell.—p. 282.
*Lymphaticostomy for Peritonitis. C. H. Whiteford.—p. 302.
*Lymphaticostomy in Peritonitis. A. Cooke.—p. 309.
*Hypophysial Adenoma. N. M. Dott and P. Bailey.—p. 314.
*Right Duodenal Hernia. F. R. Brown.—p. 367.
*Some Unusual Manifestations of Spread by Implantation of Papillomas of Urinary Tract. B. C. Maybury and S. C. Dyke.—p. 377.
Strangulated Femoral Hernia Associated with Appendix Abscess in Hernial Sac. N. Hodgson.—p. 386.
Two Cases of Hernia Through Transverse Mesocolon. F. Strong and G. C. E. Simpson.—p. 387.
Unusually Large Fibro-Adenoma of Breast. W. E. Tanner.—p. 393.

Osteitis Deformans; Osteitis Fibrosa; Osteomalacia.—The relationship of these three conditions is epitomized by Knaggs as follows: Certain diseases of the bones owe their origin to the action of toxins—probably those of metabolic or intestinal origin. Predisposing to their development an idiosyncratic susceptibility on the part of those who suffer from them may be assumed. The ability of the bones to resist toxic influences is a factor of great importance. The relative intensity of that resistance can be roughly gauged by the extent and character of the reaction excited in the soft tissues of the affected bones. If the vitality is good, the resistance opposed to the toxins may ward off harmful effects till the constitutional strength is reduced by age and disease. The reaction under these circumstances is strong, and the resulting affection takes the form of osteitis deformans. On the other hand, if vitality is feeble the disease appears earlier—in childhood, adolescence, or early manhood. The reaction is fair but not so vigorous as in osteitis deformans. The form the disease then assumed is that of osteitis fibrosa. Lastly, when owing to the severe depression of the patient's vitality, usually by untoward circumstances, the power to react is absent, osteomalacia develops.

Cystadenoma of Pancreas.—Pancreatic cysts, polycystic kidneys and cysts of the liver and spleen are explained by Carling and Hicks by assuming the inclusion of isolated portions of the wolffian body either in the enteric buds forming the liver and pancreas in the embryonic spleen as it develops in the ventral mesogastrium, or of that part of the intermediate cell mass in which the kidney forms. In the embryo these organs all arise in the immediate vicinity of the wolffian body.

Lymphaticostomy for Peritonitis.—Whiteford cautions against too ready acceptance of lymphaticostomy as a means of treating peritonitis. He says that much more clinical experience with lymphaticostomy must accumulate before the value and risks of the operation can be decided.

Lymphaticostomy in Peritonitis.—Cooke reports four cases in which this operation was performed. In one case recovery ensued as a result of lymphaticostomy. One patient died of pneumonia and general exhaustion seventeen days after lymphaticostomy; and one patient recovered from all acute symptoms and when convalescent died on the fifteenth day, of pulmonary embolism.

Hypophysial Adenoma.—A clinicopathologic study made by Dott and Bailey of 162 examples of pituitary adenoma shows that three fairly definite types of tumor can be recognized histologically and that they represent more or less definite clinical syndromes. The syndrome of acromegaly corresponds with the chromophil adenoma, that of hypopituitarism with a chromophobe adenoma, and the mixed syndrome with a mixed type of adenoma. Case histories are given to illustrate the several syndromes. Though the knowledge of the physiologic action of the pars distalis is in its infancy, it may be asserted not only that it exerts an influence on growth, but also that the eosinophilic cells are the ones chiefly concerned. In the absence of an increase in the number of these cells, evidences of overgrowth of one sort or another have not been found to occur.

Right Duodenal Hernia.—Brown reports a case of right duodenal hernia in which operation was successfully done. It is said to be the fourth case of recorded recovery in this condition. This very rare condition has also been described as right paraduodenal hernia, and as hernia of the mesentericoparietal fossa of Waldeyer.

Spread by Implantation of Urinary Tract Papilloma.—Two cases illustrating unusual manifestations of the power of spread by implantation possessed by papillomas of the urinary tract are reported by Maybury and Dyke. In the first case the original papilloma occurred in the renal pelvis, and implantation took place on the walls of the resulting hydronephrosis. Removal of the affected kidney together with the tumor was followed by the rapid growth of a malignant tumor in the remaining kidney. The urine in this case showed much pus in the absence of any infective process. In the second case, after a simple vesical papilloma was removed, three "graft-recurrences" occurred in three separate places in the abdominal wall shortly after the operation. It is suggested that all three arose from portions of the original tumor accidentally implanted at the first operation. The primary tumor was histologically nonmalignant, but the successive recurrences showed a steady progress toward malignancy. It is suggested that the course of these cases offers an illustration of the inhibitory effect exercised by the presence of a primary tumor in the tissues on the rate of growth of secondaries and their degree of malignancy.

China Medical Association Journal, Shanghai

30: *855-974 (Oct.) 1925*

Collected Anthropometric Data on Chinese. P. H. Stevenson.—p. 855.
*Primary Tuberculosis of Tonsils and Adenoids Among Chinese. J. H. Korns.—p. 899.
Peanut Bronchitis in China; Case. A. M. Dunlap.—p. 903.
*New Antiscarlatinal Serum. S. P. Chen.—p. 911.
Life Cycles of Two New Heterophyid Flukes Occurring in Chino-Japanese Areas. E. C. Faust and M. Nishigori.—p. 914.
Fistula-in-Ano. T. Bliss.—p. 916.
Treatment of Postoperative Acidosis with Insulin and Glucose. J. C. Lawyney, L. Van and M. E. McDaniel.—p. 924.

Primary Tuberculosis of Tonsils and Adenoids Among Chinese.—In a series of seventy-four tonsillectomies and adenoidectomies among Chinese and non-Chinese patients, one patient was shown to have tuberculosis of the adenoids with no microscopic evidence of tonsillar involvement, and one, tuberculous infection of the tonsils. In forty-six tonsillectomies and adenoidectomies among Chinese, one patient had tuberculosis of the adenoids, and shortly after operation had a discharging sinus from the cervical lymph nodes which contained tubercle bacilli. In other words, the forty-five Chinese patients, without tuberculosis of the cervical lymph nodes, showed no tuberculosis of the tonsils or adenoids. While this series is small, Korns believes it would indicate a lower incidence of primary tuberculosis of the tonsils than is found in the West. The fact that Chinese do not drink cow's milk may be suspected as being responsible for this difference.

Antiscarlatinal Serum.—Throat swabs taken by Chen in severe cases of scarlet fever invariably yielded *Streptococcus hemolyticus*. A serum was prepared with this organism, and nineteen strains were selected and used. This serum appeared to have a decidedly curative effect in cases presenting a severe form of scarlet fever, especially those which a long experience considered as likely to end fatally without it. However, the serum must be administered early in the disease. It is said that although unconcentrated, the serum is required in a much smaller quantity than any of the other antiscarlatinal serums now available. This serum has not been used in the cases showing a milder form of the disease. In some cases showing a severe form it has the effect of bringing the temperature down by crisis. It appears to benefit erysipelas developing in the course of scarlatina by cutting short the course of the disease.

Journal of Okayama Medical Society, Okayama, Japan

No. 429: 999-1100 (Oct. 31) 1925

Milk-Spots, "Taches Laiteuses," in Omentum. Y. Hamazaki.—p. 999.
Effect of Xanthin Derivatives on Muscle of Rana Temporaria and Rana Esculenta. Y. Takahashi.—p. 1020.

Journal of Tropical Medicine and Hygiene, London

28: 377-392 (Nov. 2) 1925

*Phosphorus in Treatment of Various Diseases. A. Castellani.—p. 377.
Treatment of Amebic Dysentery with Stovarsol. S. C. Jamison.—p. 378.
*Fatal Case of Bacillary Dysentery in Nigeria. A. Connal and E. C. Smith.—p. 379.

Use of Phosphorus in Therapy.—Castellani speaks well of the use of phosphorated oil, externally and subcutaneously, in the treatment of granuloma inguinale, rickets, beriberi and osteomalacia. It seems to be useful as an adjuvant of quinin in certain cases of chronic malaria. Phosphorus is a powerful drug and its delayed action on the liver especially should be kept in mind; it should therefore be given with care and every precaution should be taken. Castellani has used 5 minims (0.3 c.c.) of pure oil locally, and injects ½ minim (0.03 c.c.) in 10 minims (0.6 c.c.) of almond oil subcutaneously.

Dysentery Bacilli in Gallbladder.—*Connal and Smith* report the clinical history, together with the bacteriologic and postmortem findings, in the first case of bacillary dysentery reported from Nigeria. The recovery of the bacilli from the fluid in the gallbladder leads to a suspicion that this organ may, as in typhoid, harbor the organisms for a considerable time (bile carriers). The condition of the kidneys and other organs examined points, without doubt, to a generalized blood infection of a severe nature, with relatively mild local involvement of the colon.

Lancet, London

2: 953-1002 (Nov. 7) 1925

Management of Head Injuries. W. Trotter.—p. 953.
III. Intracranial Tumors and the Surgeon. H. Cushing.—p. 956.
Diphtheria Immunization in Metropolitan Borough. C. W. Hutt.—p. 962.
*Efficacy of Tryparsamide in Cure of African Sleeping Sickness. C. C. Chesterman.—p. 965.

Tryparsamide in Cure of Trypanosomiasis.—Cases of African sleeping sickness treated with tryparsamide originally by Pearce and later observed by van den Branden and van Hoof, and cases by the last two workers alone at the laboratory of Leopoldville, afford the very satisfactory figures of 100 per cent. cure of early cases, with unaltered cerebrospinal fluid. Chesterman reports a similar success in five such cases, noted for from three and a half months to one year after treatment.

Medical Journal of Australia, Sydney

2: 497-520 (Oct. 24) 1925

*Daughter Cyst Formation in Hydatid Disease. H. R. Dew.—p. 497.
Hydatids of Lung. F. D. Bird.—p. 505.
*Preanemic Combined Degeneration of Cord. W. Evans.—p. 508.
Cesarean Section on Account of Imperforate Anus with Rectum Discharging into Vaginal Fourchette. P. L. Hipsley.—p. 509.

Daughter Cyst Formation in Hydatid Disease.—Dew asserts that the occurrence of daughter cysts in hydatid disease means that there has been some complication to the cyst. The prognosis in these cases is much worse and much more uncertain than in simple cysts. All hydatid cysts should be operated on as soon as they are diagnosed, as they are all potentially dangerous, and the longer they are left, the more likely are complications to occur. The treatment of simple cysts by the French method of injecting liquor formaldehydi before opening rests on a sure foundation, but the method is much less rational in cases containing daughter cysts. In the treatment of hydatid of the liver, any cyst containing daughter cysts should be suspected because of the practical certainty of previous biliary contamination. The presence of omental hydatids, especially if they are multiple, should at once lead to an examination of the pelvis and of the liver. In the latter, the original cyst that may have given rise to the secondary cysts should be looked for carefully and all scars and depressions explored. In all these cases a history of previous abdominal pain should be sought. Whenever an intrathoracic cyst is found to contain daughter cysts, an hepatic origin should be suspected and this should lead to an investigation of the diaphragmatic region.

Preanemic Combined Degeneration of Cord.—The absence of free hydrochloric acid in the gastric juice, the response to the van den Bergh test, the presence of numerous macrocytes and anisocytosis, with comparatively high color index, in conjunction with the changes in the posterior columns of the cord, seem to establish the diagnosis of preanemic combined degeneration in Evans' case. The only other possibility appears to be tabes dorsalis, and the presence of knee jerks and active pupil reflexes, and the failure to react to the Wassermann test with such definite cord changes are strongly against this diagnosis. The patient had been treated with large doses of free hydrochloric acid and had very definitely improved as regards both the muscular sense and the power of walking. An interesting fact was that the patient's sister had had a fractional test meal done, which revealed complete absence of hydrochloric acid.

Medical Journal of South Africa, Johannesburg

20: 313-346 (June) 1925

*Congenital Cardiac Anomalies. B. G. v. B. Melle.—p. 315.
Sterility in Women. G. Lange.—p. 318.
*Anilin Dyes in Prevention of Infection of Wounds. E. L. Ferguson.—p. 327.

Congenital Cardiac Anomalies.—Melle's patient asserted that during the third month of her pregnancy she was greatly frightened by an accident occurring to a man with a cleft lip. Her baby was born with a complete cleft palate and harelip, and the feet were in equinovarus position. The heart lay almost horizontally in the thorax. It was almost square; the right side was dilated and somewhat hypertrophied. The ductus arteriosus was widely patent, and the left pulmonary artery appeared to arise from it; the lumen of the ductus was equal to the lumina of the two pulmonary arteries. The great vessels of the heart appeared to be normal in position, but the isthmus of the aorta, i. e., the part between the left subclavian artery and the ductus, was markedly stenosed and showed a peculiar twisting of the vessel wall, thus decreasing the lumen still further. The valvular orifices were normal, there being no evidence of stenosis or atresia of the pulmonary valve. The interventricular septum was complete. However, there was a marked defect in the interauricular septum. The other organs were normal, apart from much congestion, and there was only partial expansion of the lungs, which, however, floated when placed in water.

Antiseptic Value of Crystal Violet and Brilliant Green.—Ferguson reports very good results from the clinical and experimental use of an antiseptic solution consisting of 1 per cent. of equal parts of crystal violet and brilliant green sulphate, zinc free, dissolved in 35 per cent. of 95 per cent. alcohol and 65 per cent. of water. The Rideal-Walker phenol coefficient of the blue dye is 6.4. It was found to be far superior to iodin.

South African Medical Record, Cape Town

23: 421-444 (Oct. 10) 1925

Cerebrospinal Meningitis. C. Porter.—p. 422.
*Simplified Clinical Method for Estimation of Sugar in Blood. A. D. Stammers.—p. 426.
Bailliart's Instruments Used for Estimating the Elasticity of Small Arteries. A. Verwey.—p. 427.
Retinal Disease Associated with Streptococcus Infection. D. J. Wood.—p. 431.

Simple Examination of Blood Sugar.—The principle of this test is said by Stammers to be as follows: The proteins of the blood are precipitated by heating in the presence of acid sodium sulphate and treatment with dialyzed iron. An aliquot part of the protein free filtrate is boiled with methylene blue in alkaline solution. The sugar in the filtrate reduces some or all of the methylene blue to methylene white, and from the time taken to effect removal of the blue color the amount of sugar present in the filtrate may be deduced. A large number of tests have been carried out to determine whether the reduction of the methylene blue is strictly quantitative, and it has been found that such is the case, within the limits stated, which are sufficiently wide for practical purposes.

23: 445-472 (Oct. 24) 1925

Leprosy. H. F. Sheldon.—p. 447.
*Diffraction in Biologic Structures. A. Pijper.—p. 453.
Severe Case of Lobar Pneumonia Successfully Treated with Sodium Nucleinate. F. Daubenton.—p. 463.
Case of Hypopituitarism. V. C. Bensley.—p. 463.

Diffraction in Biologic Structures.—The principles underlying the use of bacillary surface growths as diffraction gratings are discussed by Pijper. The technic of measuring the diameter of bacilli by means of their diffraction spectrums is indicated. The diffraction method of measuring the diameter of bacilli shows that the average diameter of the individuals of a given strain constitutes a biologic characteristic and is not subject to variation. The members of the coli-typhoid group show important differences in diameter. Friedberger's observations on the separation of bacteria by means of their different capillary ascent in filter paper are explained on the basis of their difference in diameter. Suspensions of red blood cells can be used as diffraction gratings. Blood smears and these gratings produce spectrums, from the size of which the average diameter of the red cells constituting the grating can be calculated. The results are particularly accurate, because the spectrum to be measured can be made very large, and because the gratings consist of very large numbers of cells. The average diameter of many millions of red cells in a blood smear can thus be estimated by a single measurement and a single calculation. Pernicious anemia is characterized by anisocytosis and an increase in the average size of the red cells. Smears from such cases used as diffraction gratings therefore should produce smaller and paler spectrums than normal blood. This is actually found to be so, and no other anemia was found to produce similar spectrums. It follows that by means of the diffraction method of measuring red blood cells, the diagnosis of pernicious anemia can be made at a glance. In a general way, Price-Jones' findings of a diurnal change in the diameter of red blood cells can be confirmed by the diffraction method.

Annales de l'Institut Pasteur, Paris

39: 789-874 (Oct.) 1925

Research on the Bacteriophage. E. Wollman.—p. 789.
The Filtrable Microbes of Influenza and Colds. L. Boez.—p. 833.
Lesions Produced by Bacillus Histolyticus. D. Combiesco.—p. 855.
*Bacteriolysis of the Gonococcus. A. Scaltritti.—p. 865.

Lytic Action of Serums on Gonococci.—Scaltritti's research demonstrated that serums from various animals refractory to gonococcus infection exert a rapid lytic action on the gonococcus. The action is different in different species; being, for instance, weaker in the guinea-pig and very intense in cattle. All strains of gonococci seem to be equally sensitive to the animal serums. The peritoneal fluid of guinea-pigs usually shows a pronounced bacteriolytic action. Heat destroys the bacteriolytic potency of the active serums. After heating to 57 C. for thirty minutes, they no longer killed the gonococci. Human serum did not display any bactericidal action on the gonococcus. These facts may possibly be utilized in treatment of various gonococcus infections.

Archives de Médecine des Enfants, Paris

28: 665-728 (Nov.) 1925

*Dactylitis from Congenital Syphilis. P. Lereboullet et al.—p. 665.
*Signs of Tuberculous Meningitis. V. Mikulowski.—p. 675.
*Uric Acid in the Cerebrospinal Fluid. P. Baumritter.—p. 681.
Emotions in Children. R. Benon.—p. 686.
*Scurvy in Infants. J. Comby.—p. 689.
Backward Mental Development of Malay (not Mongolian) Type. F. Naville and R. de Saussure.—p. 694.
Pseudomegacolon in Child, Aged 4. P. Bézy.—p. 698.
Nature of Ozena. J. Comby.—p. 702.

Syphilitic Dactylitis.—The young infant in Lereboullet, Saint-Girons and Gournay's case presented a painful enlargement of the phalanges of all but two of the fingers. Roentgen-ray examination revealed similar lesions of the long bones in the upper and lower limbs. The clinical picture and Wassermann test corroborated the syphilitic origin of the affection. There were also signs of rickets. Remarkable results were obtained with mercury inunctions. This osteoperiostitis from congenital syphilis may persist interminably in untreated cases, and, exceptionally, may entail suppuration. Instances in which only a few bones are affected may be confused with tuberculous spina ventosa, but with this the skin and joints are involved and there is generally suppuration. This syphilitic polydactylitis may develop in older children and even in adults, and in several generations.

Diagnosis of Tuberculosis in Young Children.—Mikulowski lists the methods and signs which may aid in the differential diagnosis of tuberculous meningitis in young children. He recalls, among others, Brudzinski's neck sign and contralateral reflex. The neck sign appears earlier, and is more constant than the Kernig and Babinski's signs. The neck sign was positive in 100 per cent of his cases, the two other signs only in 45 or 50 per cent. He points also to Brudzinski's cheek sign, consisting in the lifting of the hands, with the elbows flexed, on bilateral pressure below the zygomatic process; also the pubis sign, drawing back the legs when compression is applied to the pubis. These two phenomena can be elicited before any other signs of tuberculous meningitis become manifest.

Uric Acid in the Cerebrospinal Fluid in Meningitis.—Baumritter applied in thirty-two cases Grigaut's method for determination of the uric acid in the cerebrospinal fluid. The amount was not increased in most of the cases with tuberculous meningitis. A considerable increase of uric acid was manifest in epidemic cerebrospinal meningitis.

Scurvy in Infants.—Comby's cases were in two female and a male infant that had been fed with sterilized, condensed nonsweetened milk; also with homogenized milk. The children recovered after fresh milk and orange or lemon juice had been prescribed. Comby states that in ninety-two cited cases, homogenized milk could be incriminated in fifty-six instances; sterilized milk in fourteen. The disease occurred mostly at the age between 9 and 12 months. Hematuria was manifest in three; pseudoparaplegia dolorosa in ninety-one; purpura and ecchymoses in eleven; also a subperiosteal hematoma in eleven. Ecchymoses of the gum were absent in twenty-seven. Rickets was manifest in more than half of all the patients.

Bulletin de l'Académie de Médecine, Paris

94: 1007-1033 (Nov. 17) 1925

*Diabetes in the Pregnant. Labbé and Couvelaire.—p. 1016.
*Removal of Tumor of Optic Nerve. Rollet.—p. 1023.
*Nevocarcinoma of the Conjunctiva. E. Valude.—p. 1025.
Physical Training of Children. M. Boigey.—p. 1026.
Medical Surveillance of Physical Therapy. M. Boigey.—p. 1030.

Insulin in Treatment of Diabetes in Pregnant Women.—Labbé and Couvelaire treated a pregnant woman with a severe form of diabetes. Under appropriate diet and insulin (daily 50 units) the condition of the patient improved; the gestation came to full term, ending in normal childbirth. The diabetes then subsided to its previous moderate form.

Extirpation of Tumors of Optic Nerve with Conservation of the Eye.—Rollet describes his technic enabling him to remove the total orbital length of the optic nerve in two patients, without damaging the eyeball or orbit, and even without visible scar of the skin. Both cases presented an encapsulated sarcoma or cancer originating in the pia mater, involving the optic nerve. These meningoblastomas are not accompanied by metastasis, and an early intervention may prevent spreading to the brain. His patients were a young man and a girl of 8. There was no muscular paralysis and the cornea is still transparent.

Nevocarcinoma of the Conjunctiva.—Valude operated on a nevus of the conjunctiva, which had developed into carcinoma, in a young woman. In this case as well as in the five in the literature, the tumor was characterized by presence of the so-called nevus cells, which are of epithelial origin. No pigment could be detected in the tumor, and there was no tendency to invade the cornea and sclerotic.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 1445-1482 (Nov. 20) 1925

*Hypertrophic Osteo-Arthropathy and Hippocratic Fingers. Léri.—p. 1445.
*Absent Interauricular Septum. L. Zadoc-Kahn and J. Cousin.—p. 1446.
*Secondary Necrosis of the Liver. A. Cain and Boltanski.—p. 1450.
*Treatment of Pernicious Anemia. Emile-Weil and Stieffel.—p. 1454.

*Absorption of Oil in Subcutaneous Tissue. L. Binet.—p. 1458.
*Alternate Artificial Pneumothorax. Rist and Chabaud.—p. 1464.
*Recurring Cerebrospinal Meningitis. C. Zoeller.—p. 1473.
The Healed Lesions of Endocarditis. M. Renaud.—p. 1478.

Hypertrophic Osteo-Arthropathy and Hippocratic Fingers.—Léri agrees with Rist that hypertrophic osteo-arthropathy involves essentially the bone; while hippocratic finger involves exclusively soft tissues. The latter affection is chiefly due to vascular disturbances, and possibly also to certain toxins. He reports a case of hypertrophic osteoarthropathy and one of hippocratic fingers, each in time subsiding without leaving a trace.

Congenital Heart Deformity.—Necropsy in Zadoc-Kahn and Cousin's case demonstrated the absence of the whole interauricular septum. Tachyarrhythmia, hippocratic fingers and generalized cyanosis had been the clinical manifestations. Nothwithstanding the grave deformity, the patient survived to the age of 31.

Hemorrhagic Necrosis of the Liver with Tuberculosis of the Lung.—In Cain and Boltanski's patient, who had succumbed to pulmonary tuberculosis, tuberculous nodules were found in the liver; also hemorrhagic spots with fragments of necrotic liver tissue. The tubercle bacillus could not be detected in the liver; the kidneys and suprarenals appeared intact. The case is considered as an instance of tuberculous hypersensitiveness in the liver, of the nature of allergy. Analogous lesions existed in Rist and L. Kindberg's case of hemorrhagic and necrotic nephritis, and such have been experimentally produced by Roemer.

Blood from Donor with Plethora in Treatment of Pernicious Anemia.—Emile-Weil and Stieffel used transfusions of blood from a donor with a tendency to obesity and plethora in treatment of a woman with severe anemia, aged 50. After four previous transfusions of normal blood, the patient's blood showed 1,300,000 erythrocytes, and 25 per cent of hemoglobin; but after four transfusions of the same quantity of the plethoric blood there were about 2,800,000 erythrocytes and 55 per cent of hemoglobin. After seven transfusions, the general condition had greatly improved. The blood of the woman donor did not show any marked changes after the withdrawal of 4 liters of blood within three months. The case seems to confirm the presence of hematopoietic substances in plethoric blood. No selection of donors has been made hitherto beyond the blood grouping.

Absorption of Oil Injected Subcutaneously.—Summarized in Paris Letter, p. 49.

Alternating Artificial Pneumothorax.—Summarized in Paris Letter, p. 50.

Case of Cerebrospinal Meningitis with Relapses.—The meningeal reaction in Zoeller's case lasted eight days. A relapse occurred twenty days later; still another after an interval of two and a half months. Signs of general infection, such as herpes zoster and purpura, accompanied the first two attacks of the disease; but no cocci could then be detected in the cerebrospinal fluid or blood. The meningococcus A was found only on the second relapse, which persisted for a month. The patient recovered under repeated punctures, serum and vaccine therapy. The amount of sugar in the cerebrospinal fluid was considerably increased during the first two attacks; during the third the percentage was different at the beginning and end of the puncture: 0.17 and 0.50 Gm., respectively. This fact must be kept in mind since the varying glucose content of the spinal fluid may be significant in development of cerebrospinal meningitis.

Clinique, Paris

20: 321-344 (Oct.) 1925

Slow Pulse with Digitalis Poisoning. H. Grenet.—p. 323.
Gastroptosis. V. Pauchet.—p. 326.
Three Cases of Epidemic Encephalitis. Larroussinie.—p. 332.
*A Specific Treatment of Tuberculosis. D. Hervouet.—p. 334.
Dementia Praecox Consecutive to Vaccination Against Typhoid. P. L J. Charpentier.—p. 339.

Therapeutic Utilization of Antagonism Between Gout and Tuberculosis.—Hervouet noted that gout seemed to exert a favorable action on coexisting tuberculosis. As soon as elimination of nitrogenous substances was reduced under appropriate treatment of the gout, the tuberculous process flared up anew. Aggravation of the gouty condition induced amelioration of the tuberculosis. Research in this line indicated that creatinin, glycocoll and leucin seemed to be responsible for this phenomenon. He therefore prepared an isotonic aqueous solution of these substances, which he used in treatment of twenty-five patients. The first subcutaneous or intramuscular injections of 2 cc. of the solution were given at four day intervals and later, once a week. Series of ten injections were repeated after a two to four weeks' pause. No complications occurred with this solution, which is a kind of artificial serum. A general reaction in certain cases resembled the Herxheimer reaction. Fibroid forms of tuberculosis improved immediately, as also most nonfebrile manifestations of tuberculosis. The results seemed uncertain in the febrile cases. The treatment failed in tuberculosis associated with liver and stomach disturbances, and in cases complicated by gastro-enteritis.

Paris Médical

57: 437-452 (Nov. 28) 1925

Traube's Space in Congenital Gastroptosis. J. Tarruella.—p. 437.
Apparatus for Proctoscopy. R. Savignac.—p. 441.
*Test Diuresis in the Obese. P. L. Violle.—p. 444.
Heliotherapy in Laryngeal Tuberculosis. Kowler.—p. 447.

Fractional Test Diuresis in the Obese.—Violle comments on the instructive findings with test ingestion, fasting, of 200 cc. of water every half hour for two hours. Comparison with the standard findings of health shows the functional condition of various organs, and enables treatment in time to ward off serious injury. Treatment in such cases is usually addressed merely to the obesity as a whole.

Presse Médicale, Paris

33: 1553-1568 (Nov. 25) 1925

History of Research on Pancreatic Secretion. E. Hédon and E. Laguesse.—p. 1553.
*Postoperative Retention of Urine. L. Michon and Bouvier.—p. 1556.
Treatment of Arterial Hypertension. P. Pagniez.—p. 1558.

Treatment of Postoperative Retention of. Urine.—Michon and Bouvier encountered thirty-four cases of retention of urine among 195 operations on the pelvis. Instillations into the bladder of glycerin with boric acid were made in twenty-two cases (10 to 20 cc. of a 10 per cent solution). The retention subsided immediately in eighteen cases; in seventeen one instillation sufficed; two were required only in one case. Four of six patients voided urine in from ten to sixty minutes after intravenous injection of hexamethylenamin (2 Gm.), the first day after the operation. Pituitary extract injected subcutaneously (1 cc.) brought about micturition in fifteen minutes in one, and three hours in another. It failed in the third patient. The authors assert that postoperative catheterization can be avoided since certain drugs have thus proved their reliability.

33: 1569-1584 (Nov. 28) 1925

*Venous Pressure in Tuberculosis. M. Villaret and M. Martiny.—p. 1569.
Central Pneumonia Spreading to Periphery. C. Roubier.—p. 1571.
*Hemoglobinuria in Acetic Acid Poisoning. J. Sklodowski.—p. 1573.
The Psychology of the Chinese Student. A. Legendre.—p. 1579.

The Venous Pressure in Pulmonary Tuberculosis.—Villaret and Martiny's conclusions are based on 200 observations. In acute exacerbations of pulmonary tuberculosis the venous pressure was high in the miliary form; it was little changed in splenopneumonia. High venous pressure with ulcerocaseous tuberculosis may reveal a previously unrecognized affection of the lymph glands, latent effusion, or tendency to hemoptysis. A high pressure accompanied fibroid or fibrocaseous tuberculosis. Measurement of the venous pressure should be made every two weeks; it may complete the auscultation and roentgen-ray findings, and is valuable in prognosis of the local process. An increase of the pressure indicates tendency to fibroid degeneration; a sudden rise points to the menace of hemoptysis. A tardy rise of the venous pressure in artificial pneumothorax, at the sixth or eighth insufflation, usually preceded phenomena of intolerance. The effect of an artificial pneumothorax may be demonstrated better thus than by the intrapleural hypertension from the gas, or by displacement of the heart.

Hemoglobinuria in Acetic Acid Poisoning.—Sklodowski refers to one personal and ten cited cases of acetic acid poisoning with manifest hemoglobinuria. He emphasizes that hemoglobinuria is a constant phenomenon in this poisoning; it appears within the first twelve hours, and is evident even in the benign form. The hemoglobinuria may aid in differential diagnosis from other poisonings.

33: 1585-1600 (Dec. 2) 1925

*Pathogenesis of Asthma. Daniélopolu.—p. 1585.
*Stricture of the Rectum. R. Bensaude and J. H. Marchand.—p. 1588.
Digitalin Treatment of Failing Heart. J. Surmont and A. Schfdrowitzky.—p. 1590.

Pathogenesis and Treatment of Asthma.—Daniélopolu reiterates that a paroxysm of asthma is induced by a predisposing as well as by a determining factor. The presence of a local lesion, of tuberculous or other nature, is an indispensable factor for occurrence of a paroxysm of asthma. The intrapulmonary or extrapulmonary lesion induces a predisposition to asthma, even in a nonvagotonic subject, by a mechanical or anaphylactic action. The exciting factor of inflammatory, reflex or mental origin, or anaphylactic shock provokes a paroxysm through the interference of the local factor. General amphotonia only enhances the predisposition to asthma from the local factor. The latter causes hypersensitization of the sensory and motor nerve terminals in the bronchi, or renders the lung the principal location of anaphylactic phenomena. Both mechanisms are frequently associated in asthma. Daniélopolu advocates the same operation which he applies for angina pectoris, namely, cervical sympathectomy (respecting the inferior cervical ganglion); severing of all filaments of the vagus and superior laryngeal nerve in the thorax; severing of the vertebral nerve and all the rami communicantes joining the inferior cervical ganglion and first thoracic nerve with the sixth, seventh and eighth cervical, also the first dorsal. Calcium chlorid, in a daily dose of 5 to 10 Gm., given for weeks, proved the best medical treatment. Quinin was effectual in one case. Autoserum or autohemotherapy may be useful sometimes.

Diathermy in Treatment of Stricture of the Rectum.—Bensaude and Marchand report five cases of inflammatory stricture of the rectum successfully treated by diathermy, after all other methods, even operation, had failed. A Hegar bougie served for the active electrode; used with twin tin disks, applied to the lumbar and the abdominal regions. A current of 3 amperes was employed for an exposure, lasting from twenty to thirty minutes. Diathermy was applied three times a week; after ten applications the patient rested for two weeks. The treatment was continued for a certain time after the largest dilator could be freely introduced into the rectum. Hemorrhages, occurring on the first exposures, ceased on the eighth or ninth. Medical or surgical diathermy, with high frequency currents, gave good results also in treatment of benign tumors and certain forms of rectitis.

Schweizerische medizinische Wochenschrift, Zurich

55: 1085-1104 (Nov. 26) 1925

*Hypochloremia in Sublimate Poisoning. F. Heim.—p. 1085.
Stimulating Irradiation of Ovaries. Mennet.—p. 1091.
*Optic Neuritis and Multiple Sclerosis. E. Friedinger.—p. 1093.
Hemoclastic Reaction in Prurigo. W. Brack.—p. 1097.
Treatment of Varicose Veins. R. Jung.—p. 1100.

Hypochloremia in Sublimate Poisoning.—Heim observed in his fatal cases of poisoning with mercuric chlorid a lower concentration of blood chlorids than in any other condition. The lowest percentage of sodium chlorid recorded was 0.21. Although there was no loss of chlorids by the urine, he believes that the kidney had lost its power of maintaining a high threshold for chlorids. Yet it is possible that a specific action of the poison on the membranes or on the physiochemical condition of the colloids of the blood, had taken place.

Optic Neuritis and Multiple Sclerosis.—Friedinger found only three cases of multiple sclerosis in twenty-six patients who had had retrobulbar neuritis of the optic nerve. She thinks that tuberculosis or scrofulosis plays a more important rôle in the etiology; the prognosis of these cases is not so grave.

Chirurgia degli Organi di Movimento, Bologna

9: 533-639 (Oct.) 1925

*Tuberculosis of the Foot. Vayola-Coco.—p. 533.
*Trauma of the Knee. G. Ferrarini.—p. 562.
*Sympathectomy for Leg Ulcers. G. Bonani.—p. 569.
Rupture of Biceps Cubiti. T. M. Biancheri.—p. 580.
Lisfranc's Dislocation. F. Francesconi.—p. 589.
*Central Dislocation of Femur. A. Jachia.—p. 605.
*Initial Manifestations of Tabes. R. Zanoli.—p. 613.
Fracture of Heel-Bone. A. Comolli.—p. 622.
Fibroma in Finger. A. Avoni.—p. 629.

Tuberculosis of the Foot at a Seashore Sanatorium.—Vayola-Coco expatiates on the great advantages of "heliomarine therapy" as it acts solely by stimulating all the natural reacting potencies. Of his eighty-five cases, 94 per cent. of the thirty-three patients with closed lesions were completely cured, and 63.24 per cent. of the fistulous cases. In only 1.48 per cent. of this group did the lesion continue a progressive course. The patients were in the sanatorium for an average of 365 days in the cured cases.

Fracture of Epicondyle at the Knee.—Ferrarini emphasizes the importance of distinguishing between the tearing loose of the muscle head and actual fracture of the epicondyle and other traumatic lesions. Detachment of the tendon of the adductor magnus is liable to entail serious disability, which is not the case with simple contusion and sprain of the knee. In his personal cases, the permanent disability from traumatic detachment of the adductors of the superior half of the epicondyle was officially estimated at 15 per cent. This separation of the muscle occurs from some sudden violent contraction of the adductors. As the disturbance from it is exclusively subjective, it invites errors in diagnosis and treatment.

Periarterial Sympathectomy in Treatment of Varicose Ulcers.—Bonani decorticated the femoral artery for a stretch of about 12 cm. in six cases of leg ulcers of seven to twenty years' standing. The roentgen rays showed the characteristic lesions that accompany grave varicose disturbances. In a seventh case, the neurotrophic process was on the foot. The age ranged from 57 to 75. In four the healing was complete, but it has proved permanent only in one case. In all the others the lesion recurred in a few days or months. The immediate results were good in all.

Bilateral Central Dislocation of the Femur.—The deformity in Jachia's case had developed during protracted puerperal infection. The woman had been in bed eleven months.

Joint Disease as Initial Manifestation of Tabes.—Zanoli lauds the instructive findings with roentgenography as exemplified in his two cases of knee disturbances following slight trauma. Destructive lesions rapidly developed in the knee or hip joint, but with total lack of subjective symptoms. The diagnosis of tabes was soon unmistakable.

Rivista di Clinica Pediatrica, Florence

23: 721-792 (Nov.) 1925

Mediastinal Pleurisy. G. Macciotta.—p. 721.
*Facial Phenomenon in Older Children. C. Lombardi.—p. 744.

Facial Phenomenon in Older Children.—Lombardi elicited the facialis phenomenon in 150 out of 819 not selected children between 3 and 10 years of age. She found in very few of them a galvanic overexcitability and other signs of latent tetany. The facialis sign indicates in the older children only an increased irritability of the nervous system.

Anales de la Facultad de Medicina, Montevideo

10: 545-620, 1925

*Flexion of the Gallbladder. Garcia Lagos et al.—p. 545.
*Short Small Intestine. L. Mérola.—p. 552.
Case of Volkmann's Contraction After Ligation of Axillary Artery. C. V. Nario.—p. 560.
Vegetative Disturbances in Children with Asthma. V. Zerbino.—p. 578.
Treatment of Tuberculous Hemoptysis. A. Nario.—p. 594.

Congenital Deformities of the Gallbladder.—García-Lagos, Ugón and Cantón describe a case in which the gallbladder was much enlarged and shaped like a retort with a long beak. It had caused no disturbance in the healthy young man until sudden sharp pains in the lumbar region developed, spreading forward and to the shoulder, and a hard tumor was palpated in the right anterior flank. The tumor proved to be the gallbladder, the entire body of the organ enclosed in the hepatoduodenal ligament. All disturbances ceased after the removal of the gallbladder.

Abnormally Short Small Intestine.—In Mérola's case the anomaly was accidentally discovered during an operation for abdominal injury from an automobile accident in the man aged 60. The entire small intestine measured only 80 cm. but it was dilated in parts.

Archivos Arg. de Enf. del Ap. Digestivo, Buenos Aires

1: 1-188 (Oct.) 1925

Stenosis from Congenital Periduodenitis. P. Duval and J. C. Roux.—p. 7.
*Basal Metabolism with Gastric Cancer. C. Bonorino Udaondo et al.—p. 13.
*Giardiasis of Biliary Passages. M. R. Castex and J. C. Galán.—p. 30.
Duodenal Ulcer. Del Valle, Jr.—p. 78.
Retractile Mesenteritis in Adult. P. Escudero and E. V. Merlo.—p. 95.
Case of Supramesocolonic Periduodenitis. T. Martini.—p. 107.
Insufficiency of Ileocecal Valve. M. R Castex et al—p 124.
Infected Gastric and Duodenal Ulcers. A. Ceballcs.—p. 159.

Basal Metabolism with Gastric Cancer.—The conclusions from study of eighteen cases of malignant disease of the stomach are that although the basal metabolism is always low in these patients, this should be ascribed to the lack of appetite and defective nutrition rather than directly to the cancer itself.

Giardiasis of the Biliary Passages.—Castex and Galán give the details of eleven cases. Of all the various drugs tried, neo-arsphenamin by the vein proved most effectual. Even when the parasites were not entirely expelled, the number was markedly reduced in the stools as well as in the fluid obtained by the duodenal tube. Constipation was found in 54.5 per cent and digestive disturbances connected with the inflammatory condition of the duodenum were noted in 72.7 per cent. The liver was enlarged in 63 per cent and there were nervous symptoms of toxic origin in the same proportion, and general toxemic phenomena in 81.8 per cent.

Archivos Españoles de Pediatría, Madrid

9: 513-576 (Sept.) 1925

*Asthma in Children. L. Morquio.—p. 513.
*Erythromelalgia in Children. Navarro and Sas.—p. 521.
*Arsphenamin in Chorea. L. Herrera.—p. 527.

Asthma in Children.—Morquio comments on the prevalence of asthma in his country (Uruguay). It affects all ages, including young infants, but the most common beginning is in the second year, during an attack of bronchitis. The attacks are most common with abrupt changes in the weather; no connection with adenoids is apparent, but he has found asthma in close relatives in 80 per cent of the cases. It belongs to the pathologic group of sluggish metabolism, the gouty tendency. The most tenacious cases have been those accompanying eczema. A change to the seashore benefits some cases remarkably and aggravates others. One child, born in London, developed asthma for the first time when brought to Montevideo, but had no further attacks when returned to London. Hygiene and prophylaxis are the main reliance. Breathing exercises help in some cases, especially after removal of adenoids; during the attacks, aconite and atropin, sometimes, epinephrin. In prophylaxis, he gives 0.3 to 0.5 Gm. of potassium iodid daily, alternating with organotherapy, especially pancreas extract.

Erythromelalgia.—Navarro and Sas add another to the 159 cases of erythromelalgia they have found on record. Only eight of the total were in children, including their personal case in a boy of 7. Pains in the feet at night had been the first symptom. In the course of four years they had become almost continuous, with only twenty minute remissions for the last few months. The boy died then from typhoid. He had seemed otherwise healthy, and had only a history of whooping cough.

Arsphenamin in Chorea.—The Wassermann test was negative in the nine cases of chorea reported by Herrera as cured by from one to seven intravenous injections of arsphenamin as suggested by Bokay. The chorea was of a few weeks' up to six years' standing. There was nothing to indicate syphilis in any of the families, except a positive Wassermann in one of the mothers.

Gaceta Médica de Caracas

32: 193 208, 1925

*Malaria in Venezuela. E. P. de Bellard.—p. 193.
*Bacillary Dysentery. E. P. de Bellard.—p. 196.
*Martenot's Sign of Apparent Death. Villegas Ruiz.—p. 198.
The Mosquitoes and Gnats of Venezuela. M. Núñez Tovar.—p. 203.

Malaria in Venezuela.—De Bellard relates that in the country around Lake Maracaibo the higher, well drained districts are free from malaria while in the lowlands, in spite of extreme prophylactic measures, including quinin daily, the malaria parasites were found in the blood of 48 per cent. of the workmen, and the disease seems much more tenacious than the malaria of the Mississippi Valley or Western Europe. One of the engineers was given daily 1 gm. of quinin by the vein and 4-5 gm. by the mouth for two weeks before the attacks were arrested and the arrest then was only for a few days. The attacks have recurred regularly since, rebellious to all treatment. De Bellard has obtained the best results with intramuscular injection of 1.5-2 gm. repeated in twelve hours every day, and for two days after the temperature is permanently normal. In his four years of service in the region, being consulted by about 1,000 persons every month, 50 per cent. of whom have syphilis, he has never encountered a case of general paresis. He regards this as testifying to an actual antagonism between paresis and malaria.

Bacillary Dysentery.—De Bellard states further that the mortality from bacillary dysentery in the region was regularly from 40 to 80 per cent. But in his last three cases all promptly recovered under castor oil treatment by Welch's method: 60 c.c. at once, and 4 c.c. every daytime hour the second and third day, repeating if necessary. None have developed dysentery among those vaccinated with Besredka's bile vaccine.

Blister Sign of Apparent Death. — Villegas Ruiz confirms the reliability of a test blister from a burn when the vital processes are merely in abeyance. In a cadaver the skin puffs up and bursts.

Medicina, Mexico City

6: 95-120 (Oct.) 1925

Treatment of Lumbago. C. Zuckermann.—p. 102.
*Treatment of Persisting Hiccup. C. Zuckermann.—p. 103.
Intravenous Calcium Salts in Pulmonary Tuberculosis. J. G. Monroy Velasco.—p. 109.
Sacralization of Lumbar Vertebra. W. López Albo.—p. 111.

Hiccup from Retention of Urine.—Zuckermann reports two cases in which an attack of influenza or exacerbation of alcoholic disease of the liver was accompanied with persisting hiccup. Both patients complained of scanty output of urine, and catheter evacuation of the bladder arrested the hiccup at once.

Prensa Médica Argentina, Buenos Aires

12: 497-532 (Oct. 20) 1925

*Hereditary Hip Joint Disease. H. Valls and J. Verbrugge.—p. 497.
Sympathetic Imbalance in Psoriasis Castex and Camauer.—p. 503.
Prenatal Protection of Maternity. L. Bard.—p. 515.
The Organism's Fight Against Infections. L. La Porta.—p. 522.

Hereditary Origin of Coxa Plana.—Valls and Verbrugge give an illustrated description of three cases of coxa plana or deforming arthritis of the hip joint in which the father or younger members of the family had presented the same affection. They cite other instances of familial occurrence, and theorize that the hereditary factor is a predisposition. Under the influence of trauma, infection or nutritional or endocrine disturbances, the child develops osteochondritis, the adolescent, coxa vara, and the adult, arthritis deformans.

Revista Med.-Quir. de los Hospitales, Bogota

1: 1 44, 1925

The Typhoid Syndrome. J. M. Lombana Barreneche.—p. 8.
*Mixed Tumors of the Jaws P. Martinez —p. 9.
Lymphadenoma of the Neck. Garcia Maldonado.—p. 18.
Roentgenography of Gastric Cancer. M. Weiser.—p. 20.
Case of Aneurysm of the Aorta. A. Guzman —p. 24.
Medical Education in Colombia. J. Vicente Huertas.—p. 26.

Mixed Tumors of the Jaws.—Martinez' illustrations show that these tumors may grow to the size of the head of an adult but still can be successfully removed. This was the case in the woman and the two men whose cases are described.

The tumors were a fibrochondroma or fibromyxoma, with or without sarcoma. He removed the entire jaw, and there has been no recurrence to date. In one case the tumor had been twenty years in growing to its enormous size.

Archiv für Verdauungs-Krankheiten, Berlin

36: 1-188 (Oct.) 1925

*Diet in Diseases of the Stomach. A. L. Molnar and O. Porges.—p. 1.
Indicanuria with Gastrocolonic Fistula. H. Steinitz.—p. 29.
*Intestinal Putrefaction. J. von Deschwanden.—p. 34.
*Contrast Test Meal. T. Bársony et al.—p. 76.
Gastric Sarcoma. M. Meischke.—p. 82.
*Action of Antacids. E. Silberstern and L. Pirk.—p. 86.
Gastric Digestion. J. Vándorfy.—p. 95.
*Clinical Aspect of Pancreas Necrosis. R. Tscherning.—p. 109.
Chronic Appendicitis. F. Ehrlich.—p. 114.

Diet in Diseases of the Stomach.—Molnar and Porges endeavor to obtain experimental evidence for the old experience as to the advantage of stale bread over fresh, and of the reciprocal favorable action of fat and bread, as well as of cheese and bread. The bread enhances the formation of an emulsion of fat, and increases the acidity of the stomach contents. Bread gets more finely divided when old or mixed with fat. The acidity of the stomach contents is higher with fresh bread, and evacuation is slower. The optimal acidity for digestion of cheese is reached sooner in the presence of bread.

Intestinal Putrefaction.—Deschwanden confirms the value of Rodella's putrimeter in diagnosis of intestinal putrefaction.

Contrast Test Meal.—Bársony, Friedrich and Wolf combined the 5 per cent alcohol test meal with a suspension of a barium salt. This enabled them to study the movements of the stomach while testing the secretion aspirated with a fine (duodenal) tube.

Action of Antacids.—Silberstern and Pirk conclude from their experiments that magnesium oxid and calcium carbonate, which do not dissolve readily in water, are preferable to sodium bicarbonate. The latter has a tendency to render the stomach contents alkaline.

Clinical Aspect of Pancreas Necrosis.—Tscherning's patient, a diabetic, responded well at first to small doses of insulin. Later on he became refractory to all the available brands. Necropsy revealed necrosis of almost the entire pancreas.

Deutsches Archiv für klinische Medizin, Leipzig

149: 1-128 (Nov.) 1925

Hemogram. M. Ernst.—p. 1.
*Hypertension. O. Müller and G. Hübener.—p. 31.
The Duodenal Tube. J. Jünger.—p. 54.
*Research on Urobilin. A. J. L. Terwen.—p. 72.
*Molting of the Blood. A. Lichtenstein and A. J. L. Terwen.—p. 102.
Urobilin of the Feces. A. Lichtenstein and A. J. L. Terwen.—p. 113.
*Action of Papaverin on the Stomach. Bársony and L. v. Friedrich.—p. 117.
Gastroscopy. W. Sternberg.—p. 122.

Hypertension.—Müller and Hübener confirm the existence of one type of hypertension on a purely vasoneurotic basis—without any disturbance of the kidney. This is the constitutional type with an important family history. Besides this they admit the exogenous hypertension due to an acquired nephritis or lesion of the arterioles. The nervous system and the condition of the capillaries deserve more attention in making the diagnosis.

Research on Urobilin.—Terwen publishes details of his method of quantitative determination of urobilin in urine and feces. He reduces it quantitatively to urobilinogen which is extracted and estimated colorimetrically. Urobilin prepared from such a solution of urobilinogen seems to be very pure. Its properties are described. Some previous communications on this subject were summarized in these columns Aug. 1, 1925, page 398, and Aug. 22, page 644.

Renewal of the Blood.—Lichtenstein and Terwen found 135 mg. of urobilin per day and 111 mg. per hundred grams of feces as the average, and 200 mg. per day as the maximum, in the feces of fifteen healthy persons. The excretion varies from day to day. Normal urine contains less than 1 mg. per day. Estimating the amount of blood in a normal adult (70 Kg.) at 3,500 Gm., with a hemoglobin content of 14 per cent, and figuring on the production of 21.1 Gm. of urobilinogen from 21.9 Gm. of hematin (contained in the amount of hemoglobin specified), and on the elimination of 150 mg. of urobilin per day, the whole blood is renewed in 140 days or less. (Eppinger concluded, from the secretion of bilirubin, in sixty to forty-three days.) They compare this normal speed of destruction with that of any given subject and call the ratio an index of the "molting" of the blood. Its formula is: $\frac{70}{P.} \times \frac{100}{Hb} \times \frac{Ur}{150}$ (P = weight in kilograms; *Hb.* = percentage of hemoglobin; Ur. = daily excretion of urobilin in milligrams). Other signs of increased wastage are the supravitally stained substance in more than 0.5 per cent of the erythrocytes, and the increased bilirubinemia.

Action of Papaverin on the Stomach.—Bársony and Friedrich found that papaverin had no influence on the tonus, peristalsis and evacuation or secretion of the stomach, nor on the action of the pylorus.

Jahrbuch für Kinderheilkunde, Berlin

110: 253-374 (Nov.) 1925

*The Habitus and the Pituitary in Children. E. Glanzmann.—p. 253.
*Active Immunization Against Diphtheria. W. Bayer.—p. 273.
Wilson's Disease. Brückner.—p. 284.
*Hemophilia. R. Feissly.—p. 297.
*Sugar of the Blood and Tissues. B. Steiner.—p. 309.

The Habitus and the Pituitary in Children.—Glanzmann observed eighteen cases of the syndrome described by Lederer and attributed to constitutional changes. He ascribes this increased tendency to obesity with hypoplasia of the sex organs, and usually rapid growth, to pluriglandular disturbances, with the pituitary as the most important. Some of these children show a habitus of the opposite sex. The teeth appear early, even with rickets. The testes descended in his cases after administration of a pituitary extract. Milk is to be restricted.

Active Immunization Against Diphtheria.—Bayer finds that the foundations for the T-A immunization are not yet as solid as they seem. He had good results with Böhme and Riebold's application of living diphtheria bacilli on scarified skin.

Hemophilia.—Feissly concludes from his experiments that the retarded coagulation time characteristic of hemophilia is due to some anomaly in the formation of serozyme (prothrombin) from proserozyme. He is inclined to attribute this to the presence of some stabilizing factor—perhaps Howell's heparin. Transfusion of citrated blood is the best treatment for hemophilia.

Sugar of the Blood and Tissues.—Steiner compared the sugar content of the blood and of the blister fluid in sixty children. The latter was higher in two children with diabetes, and lower in the majority of measles patients, and the two were nearly equal in adolescents with goiter.

Monatsschrift für Geb. und Gynäkologie, Berlin

71: 121-248 (Nov.) 1925

Incarceration of Retroflexed Pregnant Uterus. G. H. Schneider.—p. 121.
Application of Forceps to the Breech. A. Hermstein.—p. 125.
Treatment of Mastitis. L. Seitz.—p. 134.
*Vaginal Bacilli. R. Tateyama.—p. 136.
*Preventive Streptococcus Immunization. N. C. Louros.—p. 142.
Ophthalmia from Infected Abortion. W. Lüttge.—p. 156.
Mineral Mud Treatment of Gynecologic Inflammations. Butomo.—p. 160.
Collapsible Speculum. H. Sellheim.—p. 173.
Change of Myomas into Sarcomas. O. von Küttner.—p. 177.
Uterus Transplantation in Animals. Kakuschkin and Bykow.—p. 181.
Roentgen-Ray Treatment of Pelvic Inflammations. O. Bott.—p. 184.

Vaginal Bacilli.—Tateyama found in Japan large amounts of a pure culture of Döderlein's bacilli in the vagina in 90 per cent. of healthy women in the first or second month of pregnancy. They decreased in numbers later. Amenorrhea not due to pregnancy has a low degree of bacteriologic purity. He believes that the high first degree of purity is one of the signs of beginning pregnancy. In differential diagnosis, it speaks also for an extra-uterine pregnancy and against adnexal tumors. Larger numbers of vaginal bacilli testify in favor of appendicitis as against gynecologic inflammations in his opinion.

Preventive Streptococcus Immunization.—At Bumm's clinic, Louros has had further excellent results with preventive injections of a streptococcus vaccine or its combination with an antiserum. The latter was used only immediately before labor. He emphasizes, however, that the method prevents only the septicemia, not a local infection, which may be fatal.

Münchener medizinische Wochenschrift, Munich

72: 2043-2088 (Nov. 27) 1925

Preparation and Determination of Oxyhemoglobin. W. Autenrieth and K. Dorner.—p. 2043.
*Saprophytes and Tuberculin. J. E. Wolf.—p. 2045.
Injury from Blood Transfusion. E. Hempel.—p. 2046.
Silo Fodder and Silo Milk. Trumpp.—p. 2048.
Athletic Work and the Metabolism. P. Schenk.—p. 2050. C'td.
Examination of Competing Athletes. O. Huntemüller.—p. 2053.
Gymnastics as Shock Treatment of Tuberculosis. Reifenberg.—p. 2055.
*Dijodtyrosin and Metabolism. H. Beumer and B. Kornhuber.—p. 2057.
Prevention of Tuberculosis in Monkeys. Willies.—p. 2058.
Rectal Examination by Midwives. H. Baumm.—p. 2058.
*Defloration Cystitis. A. Narath.—p. 2061.
Gymnastics for Tuberculous Children. K. Nüssel.—p. 2065.
Occupational Injuries. H. Koelsch.—p. 2068.

Saprophytes and Tuberculosis.—Wolf observed inhibition of the cutaneous reaction when "Old Tuberculin" was mixed with various nonpathogenic germs, such as Much's cytolyticus. The reaction to partial antigens—including the water-soluble—was intensified.

Dijodtyrosin and Metabolism.—Beumer and Kornhuber saw no increase in creatin elimination in children taking 1.5-3 Gm. of this substance. It was without any effect in a case of true myxedema, which responded well to thyroid treatment.

Defloration Cystitis.—Narath examined twenty-three women with cystitis following defloration. Only 30 per cent of them were due to bacterial infection (mostly colon bacillus); the rest was rather an injury than a cystitis. A large percentage —especially of the first group—admitted masturbation.

Zeitschrift für Tuberkulose, Leipzig

43: 441-506 (Nov.) 1925

*Occupational Infection with Tuberculosis. Braeuning.—p. 441.
The Chest in Tuberculous Children. H. Götz.—p. 450.
Muscle Spasms in Tuberculosis. P. Wiessner.—p. 455.
*Results of Pneumothorax Treatment. D. Epstein.—p. 463.
Treatment of Tuberculosis with Methyl Antigen. F. v. Kováts.—p. 468.
Urochromogen Reaction. W. Grossmann.—p. 475.
Turbidity Test for Syphilis in the Tuberculous. E. Hager.—p. 477.
Silicic Acid-Calcium Treatment of Tuberculosis. M. Kärcher.—p. 482.
Japanese Tuberculosis Congress. R. Arima.—p. 483.

Occupational Infection with Tuberculosis.—Braeuning publishes his expert testimony on a few cases of infection acquired in the treatment of tuberculous persons.

Pneumothorax in Tuberculosis.—In the course of ten years Epstein treated 204 patients with artificial pneumothorax and 7 per cent were cured; 10 per cent improved; in 39 per cent the treatment was discontinued because of the wish of the patient, and in 14 per cent for other reasons.

Zeitschrift für Urologie, Leipzig

19: *801-880, 1925*

Kidney Insufficiency with Hypertrophied Prostate. Von Illyès.—p. 801.
Treatment of Mechanical Uremia. H. Picard.—p. 808.
Madder Root in Treatment of Cystitis. W. Saupe.—p. 810.
History of the Catheter. E. Ebstein.—p. 813.
Diagnosis of Cystic Kidney. F. Herzog.—p. 815.
Lithiasis of Ureter. C. Perrier.—p. 819.
Kidney Tumors. Wossidlo.—p. 829.
*Lumbar Laparotomy. Von Lichtenberg.—p. 830.
*Tumor or Nephritis. Stutzin.—p. 832.
Essential Hematuria. Casper.—p. 835.
Infectious Gangrene of Scrotum and Penis. Bitschai.—p. 837.
Surgery of Double Kidney. Siedner.—p. 842.
Strictures of Vesical Orifice of Ureter. Heckenbach.—p. 845.
"Surgical Treatment of Nephritis." M. Zondek.—p. 850.

Lumbar Laparotomy.—Lichtenberg recommends this method in intra-abdominal complications of surgical diseases of the kidneys.

Tumor or Nephritis?—Stutzin's patient had a high blood pressure, hyaline casts and attacks of hematuria. The urine became normal and the blood pressure went down after extirpation of a hypernephroma.

Zentralblatt für Gynäkologie, Leipzig

49: 2593-2640 (Nov. 14) 1925

*Leukorrhea. P. Zweifel.—p. 2593.
*Gynecologic Research on Neoplasms. A. Greil.—p. 2595.
Unusual Site of Ovary. W. Lubosch.—p. 2608.
Brow Presentation. F. Jess.—p. 2609.
Psychotherapy in Gynecology. G. v. Wolff.—p. 2612.
"An Ovarian Hormone." A. Lipschütz.—p. 2621.
Cesarean Section in Edema of the Vulva. J. P. Greenhill.—p. 2623.

Leukorrhea.—Zweifel has been using a 2 per cent. solution of silver nitrate in vaginal leukorrhea. He pours it in through a cylindric speculum, which he keeps moving to and fro until the vagina contracts to hold it. Since 1910 he has been supplementing this with a douche with a 0.5 per cent. solution of lactic acid.

Gynecologic Research on Neoplasms.—Greil wants every student of cancer to go first to the school of the gynecologist and the embryologist. The gynecologist holds the key to the cancer panacea. The implantation of the ovum and placentation are the fundamental special case for the study of neoplasms. The only hope to prevent cancer is in the prenatal care in respect to the fetus—the only thing the physician can hope to influence. A prenatally acquired predisposition to tumor formation cannot be dispelled later.

49: 2641-2688 (Nov. 21) 1925

Phosphoric Acid in Vaginal Secretion. H. Rossenbeck.—p. 2641.
*Retraction and Hemostasis Post Partum. J. Wieloch.—p. 2644.
*Action of Insulin in the New-Born. E. Vogt.—p. 2652.
Determination of Age of Fetus. V. Rubeška.—p. 2671.
Treatment of Asphyxia of the New-Born. M. Litwak.—p. 2676.
Phototherapy of Hemorrhages. A. Landeker.—p. 2677.
Primary Cancer of Vagina. H. Bock.—p. 2681.

Retraction of Uterus and Hemostasis Post Partum.—Wieloch observed that a comparatively low pressure of the water in irrigation of the uterus post partum was apt to distend the organ. Yet it did not cause any hemorrhage, and the uterus retracted, afterwards, immediately.

Action of Insulin in the New-Born.—Vogt reduced the physiologic loss of weight in the first days of life by injection of small doses of insulin. This speaks for the theory attributing the loss in weight chiefly to disturbances of the water metabolism. Insulin acts well in dystrophia of the new-born.

49: 2689-2752 (Nov. 28) 1925

Contracted Pelvis. W. Zangemeister.—p. 2690.
Blood Sugar in Mother and Fetus. K. Hellmuth.—p. 2691.
Menstrual Recurrences of Herpes. A. Niedermeyer.—p. 2694.
Menstruation with Ovarian Cancer. H. O. Neumann.—p. 2695.
*Traumatic Retroversioflexion. W. Raaflaub.—p. 2706.
Fatal Prolapse of the Uterus. S. Böhm.—p. 2715.

Traumatic Retroversioflexion.—Raaflaub regards tenderness of both inguinal regions as a typical symptom of traumatic retroversioflexion of the uterus.

Zentralblatt für innere Medizin, Leipzig

46: 1113-1136 (Nov. 21) 1925

*Incipient Insufficiency of the Kidneys. O. E. Guttentag.—p. 1114.

46: 1137-1168 (Nov. 28) 1925

Indicanemia and Uremia. O. Klein.—p. 1137.

Incipient Insufficiency of the Kidneys.—Guttentag found that an increase in the uric acid content of the blood is frequently the first and the last sign of insufficiency of the kidneys. Yet it cannot serve as a substitute for determination of the residual nitrogen, or, which is still better, of the urea, because it is quite independent of the insufficiency. Besides this, the increase in uric acid in the blood is not proportional to the insufficiency, and it stops at a certain point.

Časopis lékařů českých, Prague

64: 1681-1716 (Nov. 21) 1925

Epilepsy with Myoclonia. J. Pelnář.—p. 1681.
Fetishism. V. Vondráček.—p. 1682.
Demelin's Forceps. F. Krecar.—p. 1688. C'td.
Hydro-Electric Bath and the Blood Pressure. Zoubek.—p. 1692. C'td.
Radium Therapy. F. Tománek and M. Ort.—p. 1696.
*Epidemic Herpes Zoster. Tichý.—p. 1704.

Epidemic Herpes Zoster.—Tichý observed within a few weeks thirty-five cases of herpes zoster in adults in one small town.

Vestnik Roentgenologii i Radiologii, Leningrad

3: 233-302, 1925. Partial Index

*Biologic Action of Roentgen Rays. M. Nemenoff.—p. 233.
Effect of Roentgen Rays on Arterial Pressure. N. Panoff.—p. 239.
*Influence of Roentgen Rays on Gastric Secretion. A. Yugenburg.—p. 247.
*Roentgen-Ray Therapy of Syringomyelia. B. Sharapoff.—p. 275.
Radiotherapy of Tuberculosis. R. Gasul.—p. 281.
Osteochondromatosis of Shoulder Joint. V. Osinskaya.—p. 293.

Biologic Action of Roentgen Rays.—Nemenoff concludes from personal observations and study of the literature that the roentgen rays cause a rapid exhaustion of the cells: the older the cell, the more sensitive to their action. Mitosis is a sign of cell senescence, and this may be induced by the roentgen rays through disturbances of the cell metabolism.

Influence of Roentgen Rays on Gastric Secretion.—Yugenburg experimented on dogs with a fistula in the prepyloric region. Small or therapeutic doses of roentgen rays first increased the gastric secretion, including that of hydrochloric acid; then reduced it temporarily. Large doses increased the secretion; a single dose of 5 H. produced an ulcer of the stomach, resembling round ulcer in man, while not causing ulceration of the skin. The gastric mucosa seemed to be only slightly sensitive to the rays, since repeated medium doses caused only insignificant lesions. The mucous membrane of the small intestine proved highly susceptible to the rays; even small doses caused ulceration.

Roentgen Ray Treatment of Syringomyelia.—Sharapoff applied roentgen-ray treatment in fourteen cases of syringomyelia. The abnormal sensibility improved after three or four exposures. In five the skin anesthesia disappeared completely; in the others, only partially. The sense of temperature approximated normal after five or six exposures; exceptionally, after four or eight. Simultaneously the muscles became stronger and the motor disturbances improved. The dynamometric force of the hands changed from 1 or 2 Kg. before, to from 10 to 30 Kg. after the treatment. One patient, who usually fell two or three times in walking about thirty paces, after the treatment was able to walk three blocks without assistance. A dose of 1 or 2 H. at a distance of 18 cm. was applied to the affected area. Six weekly irradiations represented a series, repeated at intervals not exceeding a month. The action of the roentgen ray may be due to the phagocytosis induced as well as to the destruction of the gliomatous tissue.

Finska Läkaresällskapets Handlingar, Helsingfors

57: 833-928 (Oct.) 1925

*So-Called Retroperitoneal Lipomas. A. Krogius.—p. 833.
Psychiatry and Neurology's Mutual Dependence. H. Fabritius.—p. 854.
*The Purpura Question. D. von Wendt.—p. 865.
*Narcotics and the Blood Serum. E. Hisinger-Jagerskiöld.—p. 880.

Retroperitoneal "Lipomas."—Krogius relates that the tumor in one woman of 51 had developed within about two years but the general condition was good and there had been no hematuria. The tumor measured 36 by 30 by 15 cm. and weighed 6,150 gm. It shelled out without much trouble or hemorrhage. These retroperitoneal growths are of mesenchymal origin, and may contain all kinds of connective tissue. They should be removed by the same route as a kidney tumor, not by a laparotomy. In operating, great caution is necessary to refrain from injuring the kidney, but the main thing is to recognize and remove the tumor early, before it reaches such a dangerous size. An exploratory laparotomy during the first year in his case had shown the retroperitoneal site, but no attempt was made to reach it from the rear. Of the 165 cases on record, only 28 per cent were in men. One of the six children in the list was not operated on till his seventh year although the tumor had been noted at the age of 2 weeks. The tumors had grown from the adipose capsule or pararenal fat in 58 per cent and from the mesentery in 20 per cent. Some weighed up to 20-30 Kg. and the tumors were multiple in some cases. Some are soft, some hard or with hard bunches, but they have a capsule and are not very vascular. In twenty-five of 113 operative cases, the adherent kidney was removed, but Krogius thinks this was unnecessary and might have been avoided if the true site of the tumor had been recognized. These tumors sometimes give the false impression of fluctuation, but this is corrected by deep palpation.

The Purpura Question.—The case described by Wendt seems to confirm Glanzmann's assumption that purpura is almost invariably of anaphylactoid nature. She thinks a toxin acting on the capillaries was responsible in her case.

Calcium and Phosphorus in the Blood Serum During the Action of Narcotics.—No change in the phosphorus content of the blood serum was observed in fifteen medical students after test injection of eight different narcotics. The calcium content rose in some, dropped in others, and was unmodified in another group. The data presented indicate that during a tranquil mental state the calcium content declines.

Ugeskrift for Læger, Copenhagen

87: 981-996 (Nov. 5) 1925

*Morphin Addiction. A. Wimmer.—p. 981. C'cn.—p. 997.
*Pelvic Neuralgia. E. Hauch.—p. 984
Silver Nitrate in Treatment of Gonorrhea. B. Pontoppidan.—p. 986.
Conference on Biologic Standardization of Drugs. A. Krogh.—p. 987.
*Anticonception Technic. J. H. Leunbach.—p. 989.
Prohibition in Finland. R. Oppermann.—p. 990.
Henry Ford's Hospital in Detroit. J. Lau.—p. 991.

87: 997-1022 (Nov. 12) 1925

Tuberculin in Treatment of Asthma. R. Østergaard.—p. 1001.
Sterility of Preparations of Insulin. V. Riemke.—p. 1003.
Erythema Nodosum in Relation to Tuberculosis. A. Brems.—p. 1008.
Work of the Medicolegal Institute. J. Fog.—p. 1012.

87: 1023-1048 (Nov. 19) 1925

Sanocrysin in Pulmonary Tuberculosis. V. Bie.—p. 1023.
Gold Deposits in Sanocrysin Treatment. H. Hansborg.—p. 1033.
Reexamination After Sanocrysin Treatment. P. Kühnel.—p. 1036.
Small Doses in Sanocrysin Treatment. G. E. Permin.—p. 1037.
The Prognosis with Hypertension. R. Ehrström.—p. 1038.

Morphin Addiction.—Wimmer thinks that there is always a psychopathic basis for chronic morphin addiction and that this must not be overlooked in treatment. In diagnosis, myosis with weak reflexes to light is instructive, but he had one inveterate morphin patient with extremely dilated pupils. Emaciation without other known cause is suspicious, as also sudden changes from apathy to alertness. Libido and potency are usually partially or completely abolished, and sexual delinquencies are rare except possibly development of homosexual tendencies. In case of a crime, years of morphin addiction, or an acute morphin intoxication or disturbances from abstention or from complicating cocain or alcohol must be regarded as attenuating the responsibility to a certain extent. He warns that medical men, druggists, nurses and midwives addicted to morphin often display a tendency to force morphin on other persons. Dupouy has told of a country practitioner who was responsible by this proselyting spirit for 200 instances of chronic morphinism among his patients.

Pelvic Neuralgia with Gynecologic Affections.—Hauch explains how pelvic neuralgia and neuritis are liable to confuse the clinical picture even when they have no direct connection with the primary cause. The patient winces with pressure on tender points in the course of the nerve. She must not be asked whether she feels pain at these points; her involuntary reaction is more instructive. The case should not be labeled "hysteria" until all the possible tender points have been investigated. Organic changes in the genital organs are generally responsible for the neuralgia or neuritis and the latter may persist after the cure or removal of the pathologic tube, ovary or uterus responsible for it. He recommends rest in bed, local heat, and thirty to forty-five minutes of flushing of the vagina with 30-40 liters of water at 40-45 C. At some spas, 80 liters are used for the irrigation, the patient lying in a full warm bath. He remarks that the benefit reported from diathermy is probably due in large part to the effect on the neuralgia or neuritis element. The high frequency current has given very encouraging results in his hands (seven cured and three much improved in ten cases completing the course). The neuralgia may recur months later, but yields readily to renewed treatment.

Anticonceptional Measures.—Leunbach's experiments with spermatozoa in vitro demonstrated that fat particles push the spermatozoa aside and prevent action on them from disinfectants in a suppository. Every disinfectant solution arrests the movements of the spermatozoa at once, but in pure water they retain their movements for several minutes.

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THE ISCHIAL-RAMIC DIAMETER

THE ORIGIN OF THE COMMON LEFT CERVICAL TEAR AND ITS PREVENTION *

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The knowledge of the ischial-ramic diameter has an important bearing on the proper conduct of labor. That portion of the pelvic cavity between the plane of the superior strait and a plane passed parallel through the ischial spines is a crude, heart-shaped cylinder in which the oblique diameters are greatest (Fig. 1). Near the end of the first stage of labor the presenting part is found in one of the oblique diameters, usually the right—a left occipito-anterior presentation. In this position the left parietal bone of the fetal head is in contact with the left ischial spine and the right parietal bone is in contact with the inner surface of the descending and ascending rami of the pubis and ischium (Fig. 2). In the usual presentation, the presenting part must be forced against the left ischial spine if there is any disproportion between the presenting part and this diameter.

ANATOMY OF THE ISCHIAL SPINES

Though the ischial spines are usually located in the anterior portion of the posterior half of the pelvic cavity, they are sometimes in the middle, making a possible variation in position of more than a centimeter. Furthermore. they are not always in the same vertical or horizontal plane. They vary in size from a line, flat with the contour of the pelvic cavity, to a projection with a convex curve the edge of which may extend out into the pelvic cavity nearly a centimeter in the well known anatomic oblique direction. Their lower edges usually curve anteriorly and end in a point; many times the inner edge and lower point are markedly sharp and jagged, though covered by the vaginal wall (Fig. 3). When making an obstetric examination of the pelvis, one is at times impressed by the extreme prominence of the ischial spines and it is difficult to realize that they are situated more toward the middle than the back of the obstetric pelvis; for the examining finger finds the tip of the coccyx, which lies its full length in the pelvic floor, relatively at the same distance from the pubes as are the ischial spines. This relation is changed at the end of the first and during the second stage of labor, when the posterior dilatable portion of the pelvic outlet is stretched to the maximum degree, while the fixed ischial spines retain their position near the middle of the pelvic cavity. I do not here touch on the historic discussions of several years ago on the relation of the ischial spines to synclitism.

MEASUREMENT OF ISCHIAL-RAMIC DIAMETERS

After much experimentation with personally supervised manufactured instruments, I have found that the fingers of the examining hand serve the purpose of measurement very well. It is not necessary to measure directly the ischial-ramic diameter, because the distance from the ischial spines to the pubic notch gives the necessary information. The fixed point is the subpubic ligament, the same point as is used for determining the oblique conjugate diameter of the inlet and the anterior-posterior diameter of the outlet. The ischial-ramic diameter, from detailed pelvic measurements, I have found to average 9.5 cm., and the distance from the ischial spines to the subpubic ligament to average 8.5 cm., making an average difference of 1 cm. in the two measurements. In an individual pelvis the difference can be readily estimated with the examining finger by determining the depth of the contour of the inner surface of the rami of the pubis and of the ischium opposite the ischial spine.

To determine the length of the ischial-ramic diameter, either hand may be used, but I will describe the use of the right. The fore and middle fingers are employed as when taking the internal pelvic measurements. The right ischial spine is located and its size, shape and distance are determined. The latter measurement is found by gently pressing the tip of the middle finger against the right ischial spine and at the same time noting the point of contact of the forefinger with the subpubic ligament. By rotating the palm of the hand, the left ischial spine is located, and the point is observed at which the ulnar border of the middle finger touches the subpubic ligament. The distance between the tip of the finger and the touch of the subpubic ligament gives the basis for the calculation of the ischial-ramic diameters. In each instance the contour of the inner surface of the rami opposite the ischial spines is palpated and the estimated depth, usually a centimeter, is added, giving the complete diameter.

PLANE OF CERVICAL DILATATION

The plane passed through the ischial spines parallel to the plane of the superior strait extends anteriorly to the rami of the pubes about 2 cm. below the subpubic ligament and posteriorly through the inferior part of the third sacral vertebra.[1] I have found, by the exami-

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[1] Hodge, describing this plane of the pelvis, makes its position a little lower: "The third parallel plane should be drawn on a level with the spines of the ischia. It will be found extending posteriorly to the center of the fourth bone of the sacrum and anteriorly to the rami of the ischia, about an inch below the subpubic ligament" (Hodge, H.: Obstetrics, Philadelphia, 1864, p. 27).

nation of women in labor and by mensuration of the photographic cuts of sagittal sections of women who have died during the different stages of labor, that cervical dilatation takes place in the plane of the ischial spines. During cervical dilatation, the posterior lip of the cervix is a trifle below this plane and the anterior lip a little above, owing to the curve of the outlet.[2] The plane of cervical dilatation varies very little in location.

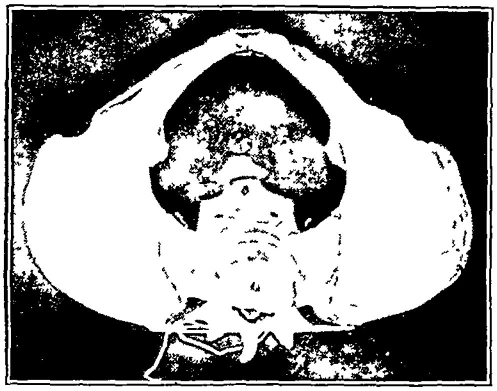

Fig 1 —Heart shaped cavity of the pelvis, which is cylindric from the superior strait to the plane of the ischial spines, projection of the ischial spines into the pelvic cavity

THE MOST FREQUENT CERVICAL TEAR

The relationship between the ischial spines and the plane of cervical dilatation being pointed out, the danger to the cervix from laceration can be readily understood. There is a great difference between the birth mechanism of the cervix and the birth mechanism of the vaginal outlet, and they must not be confused. The cervix dilates equally in all directions, allowing for the maximum stretching; while the vaginal outlet is fixed at the symphysis anteriorly, and is elastic and mobile posteriorly. This latter part, when under great strain, may be lacerated, especially if at the outlet the birth is rapid or if there is a large head. Before complete cervical dilatation has taken place, any downward pressure or expulsive effort causing the presenting part to descend brings the cervix in contiguity with the left ischial spine, and if there is any disproportion in the ischial-ramic diameter, the cervix is caught between the spine and the bony head of the child. Pressure at the point of contact occurs and the damage to the cervix is proportionate to the amount of uterine tissue exposed and the degree of pressure exerted (any pressure necrosis may extend to the limits of the injury). In a left occipito-anterior presentation, the danger to the cervix is greater from the left than from the right ischial spine.

PREVENTION OF LACERATION

Having observed the left lateral tear to be by far the most frequent of the cervical lacerations, as has been mentioned by Hart and other writers, and having found by postpartum examination these tears to be in juxtaposition with the left ischial spine, I am convinced that the cervical laceration is not caused by overstretching per se or by the asymmetrical position of the uterus, but by pinching of the incompletely dilated cervix between the fetal skull and the ischial spine. In the later half of the first stage of labor the cervix is not yet sufficiently dilated to pass above the plane of the ischial spines, but is still in a thinned out condition, grasping the presenting part. Particularly is this the case in primiparas; for in multiparas the cervix has been more or less injured previously, and therefore the amount of cervical tissue exposed is not as great. It has been the custom to allow a woman in labor to exert every effort to augment the uterine contractions. She has been allowed to grasp the nurse's hands or perhaps has been given something on which to pull. This practice is extremely poor obstetrics, and *before* the cervix is dilated, is fraught with danger. Undoubtedly because of these harmful effects on the cervix the obstetric law has been established that there should be no interference in labor until the first stage is complete.

This warning may be further emphasized because any downward traction causes the undilated cervix to come in contact with the ischial spines. Posterior and anterior and many lateral and stellate tears are due to poor instrumentation (Fig. 4). The danger may be greater from the use of forceps than from the fetal head, because the distance between the blades of the forceps is fixed and any shift in the position of their pelvic curve may bring the edge of their cephalic curve in contact with the ischial spines (the Kielland pattern is an improvement).

ANALYSIS OF CASES

If expulsive efforts are the cause of pressing the undilated cervix onto the ischial spines, when there is a disproportion between the fetal head and the ischial-ramic diameter, then controlling the expulsive efforts before cervical dilatation is completed ought to show a decrease in the injury to the uterine cervix. With these facts in mind, examinations were made in 275 cases ante partum and again post partum. The virgin os is usually round and occupies the center of the cervix. Four times post partum was the picture of the virgin os seen. From the appearance of the cervix in these four cases it was impossible to tell that labor had taken place. The remaining 271 cases were chiefly of two classes, those in which the os was round and about 5 mm. in diameter, and those in which a crease extended to the left from 3 to 5 mm. and a notch to the right from 2 to 3 mm. from the cervical os. The latter was the most frequent lesion in this series, and is probably

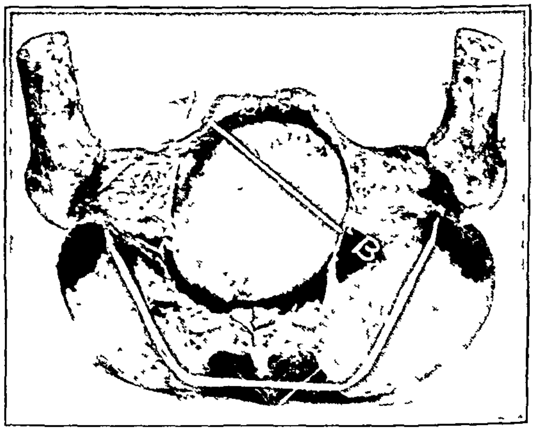

Fig 2 —The pelvis is sectioned through the ischial spines parallel with the plane of the superior strait, showing the normal relation here of the fetal head; *A-B*, ischial ramic diameter; the position of the parietal eminence and of the left ischial spine should be noted.

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[2] Above the plane of the ischial spines, the pelvic axis is straight, and below it, curved. J W. Williams (Obstetrics, New York, D. Appleton & Co, 1917, p 10) with truth points out that this "was well understood by Hodge and strongly insisted on by Sellheim" (Sellheim, H : Die Beziehungen des Geburtskanales und des Geburtsobjektes zur Geburtsmechanik, Leipzig, 1906)

the standard laceration in an unassisted labor to which the cervix is liable. Though variations were encountered in estimating the ischial-ramic diameter, the most frequent diameter was 9.5 cm., with the anterior curve of the ischial spine extending 3 mm. into the pelvic cavity and with the anterior edge of the spine 5 mm. or more ending in a sharp point. It is my conviction that this crease is due to a disproportion between the fetal head and the left ischial-ramic diameter, and the notch to a disproportion between the fetal head and the right ischial-sacral[3] diameter. To give this series some basis of comparison, I have included the examinations of twenty-five multiparas who were delivered elsewhere or were delivered by me before I realized the importance of the ischial-ramic diameter. In this group the scars are longer than those of the groups just described and are due to some definite disproportion, such as a large head which had been allowed by expulsive efforts to bruise the cervix before sufficient dilatation had occurred or, which is more usual, due to instrumentation too early applied because of supposed delay in labor. Some of the lacerations extend as far as the cervicovaginal junction, and they vary considerably in depth and number. It is obvious, then, that any interference during the first stage of labor may be injurious to the uterine cervix and predispose it years later to cancer. The first stage of labor should be so conducted that the cervix is allowed to dilate fully before the expulsive efforts are encouraged.

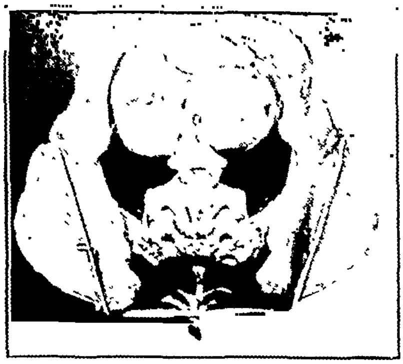

Fig. 3.—The prominence of the ischial spines, their anterior curve ending in a sharp point. The small fetal skull is not exactly in the normal oblique position, being a little too transverse.

CONCLUSIONS

1. The ischial-ramic diameter is an important pelvic diameter.
2. The plane of cervical dilatation is in the same plane as that of the ischial spines.
3. The most frequent left lateral uterine tear is due to a disproportion between the fetal head and the left ischial-ramic diameter.
4. To prevent this tearing it is necessary to wait for full cervical dilatation; any interference during the first stage of labor is fraught with danger, unnecessarily predisposing it to the development of cancer.

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ABSTRACT OF DISCUSSION

Dr. J. B. De Lee, Chicago: There are certain points about this paper which I feel require a little further elucidation. I doubt very much whether the ischial spines directly cause laceration of the cervix through the mechanism of pressure necrosis of the tissues between the head and the spines. Normally, the distance between the ischial spines is from 10.5 to 11.5 cm. and the biparietal diameter of the head which passes through that region at the time pressure on the cervix would take place, is from 9.5 to 10 cm. Furthermore, we know that by the time the head passes that neighborhood, the dilatation is complete, if not fully, then nearly complete. The mechanism of laceration of the cervix is not fully understood. We know, in the first place, that the two sides of the cervix are the most vulnerable. That is due to its congenital formation. My own microscopic studies of the cervix showed that on each side of the cervix there was a thinning of the fibrous tissue of the cervix and a still greater thinning of the muscular tissue. Incidentally, there is very little of the latter. My studies of the relation of the cervix to the central axis of the pelvis in the latter part of pregnancy and early part of labor showed that the cervix is seldom in the center. Often it is off to the side, occasionally a little anterior or posterior to a line drawn through the transverse diameter of the pelvis in any one of its planes. I have noticed, and my associate Dr. Anna Lapham called attention to this, that in occipitoposterior positions the cervix is likely to be posterior to the transverse diameter of the pelvis; in occiput anterior it is apt to be anterior. I can often tell when a woman comes to me, six or eight months after delivery, whether or not the child was lying in an anterior or a posterior position. The lacerations in the right position are on the right side of the pelvis and, correspondingly, on the left. Laceration of the cervix, vagina or perineum, cervical tears, vaginal tears and tears of the levator ani muscle and the pillar of the levator ani usually occur on that side of the pelvis in which the occiput lay during labor. Therefore, I should be inclined to disagree with the author that lacerations are always due to the compression of the cervix between the spines and the head. The fascial planes have also a great deal to do with the location of the injury. The thickening of the iliac fascia, the deep pelvic fascia, occurs anterior to the ischial spines about one-half to three-fourths inch. The planes of fascia that extend to the cervix forming the so-called cardinal ligaments are not located in the region of the ischial spines. The conditions, therefore, which expose the cervix to the full power of the uterine contractions and the laceration lie in that region, anterior to the spines.

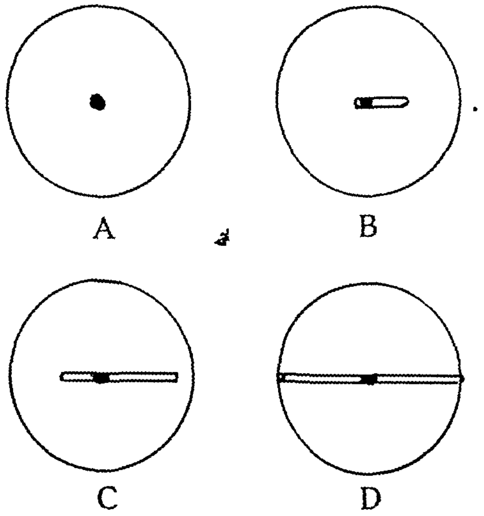

Fig. 4.—*A*, virgin type of cervix, which is occasionally seen post partum; *B*, usual type of cervix seen after an uncomplicated delivery; tear to the left and notch to the right; *C*, laceration resulting from a large head; too early expulsive efforts had been encouraged; *D*, laceration due to too early instrumentation.

Efficiency of the Heart.—The rapidity of the circulation in healthy men and animals is not proportional to their body weights, but in general to their surfaces, that is, their skin areas.—Yandell Henderson.

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[3] The ischial-sacral diameter is the distance from the right ischial spine to the right lower edge of the sacrum.

THE SELLA TURCICA

THE SIGNIFICANCE OF CHANGES IN ITS POENTGENOGRAPHIC APPEARANCE *

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The diagnostic significance of changes in the roentgenographic appearance of the sella turcica was first recognized by Oppenheim, who observed certain changes in a case of acromegaly. Since that time the roentgen-ray image of this structure has become of considerable interest to the internist, neurologist, surgeon and radiologist, and the relative frequency with which radiologists are called on to examine this structure is just evidence of the importance attached to changes in its contour.

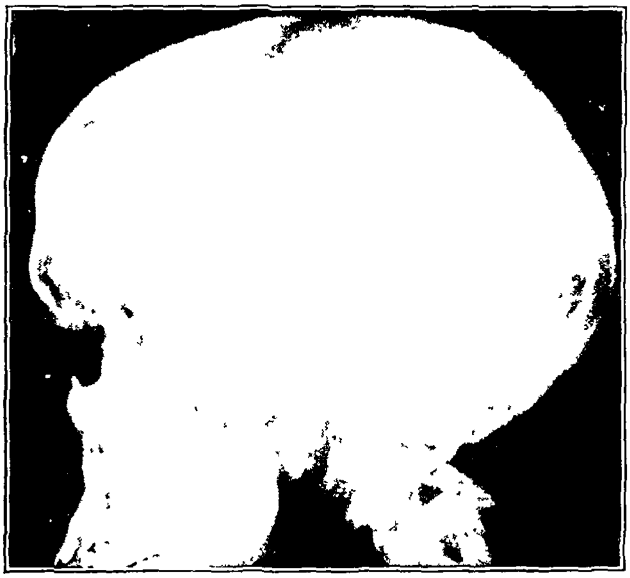

Fig. 1.—Normal sella: oval type.

Notwithstanding the numerous observations recorded in the literature concerning the sella, there still appears some confusion regarding the significance of certain changes in its roentgenographic appearance. It is futile, however, to endeavor to visualize changes in a roentgenogram without familiarity with the normal anatomy, its variations and the appearance of pathologic conditions in the gross.

With this end in view, 110 specimens removed at necropsy were carefully examined as to variations in size and contour and as to changes in the clinoid processes or related structures. Roentgenograms of many of these were available, and, coupled with the observations made from a large number of additional roentgenograms, it was possible to correlate the normal and pathologic anatomic changes with those observed in roentgenograms.

A true lateral position is a prerequisite for the correct radiographic demonstration of this structure, and considerable care should be used in leveling the head and centering the roentgen-ray tube. The importance of these details cannot be underestimated, for slight malpositions of the head or the tube will result in pseudodeformities, which are most confusing.

Generally speaking, the normal sella may be classified into three types: the round, oval and flat. This classification suggested by Gordon and Bell seems more practical than the more elaborate groupings suggested by other observers. Applying this classification to a series of 500 normal roentgenograms, consisting mostly of adult heads, the oval type (Fig. 1) was found in 58 per cent., the round (Fig. 2) in 24 per cent., and the flat (Fig. 3) in 17 per cent. of the cases. A similar classification of the contours obtained from wax impressions of the anatomic specimens revealed only slight differences in these percentages (oval, 66 per cent.; round, 21 per cent., and flat, 13 per cent.). It would appear from these figures that the oval type of sella is the usual finding in the adult. Such a condition does not hold true for the child, in which case, owing to the incomplete development of the sphenoid bone, the circular type is the rule.

Variations in the size of the normal sella are numerous, and consequently it is difficult to detect early changes. The average sella will measure 1.06 cm. and 0.81 cm. in the anteroposterior and vertical directions, respectively. This average, reconstructed from 500 normal roentgenograms of adults, coincides very closely with an average reconstructed from measurements of anatomic specimens. As any enlargement in size is generally at the expense of the adjacent structures, changes in the latter are probably more important when endeavoring to decide whether a specimen is actually enlarged or not.

Variations in the size and shape of the clinoid processes are numerous. The anterior clinoid processes vary in thickness and length and may be seen normally as short, blunt structures, with their extremities anterior to the anterior wall of the sella, or as elongated, narrow structures, extending posteriorly toward the posterior clinoid processes, with which they occasionally unite. It is not uncommon for an anterior clinoid process to be united with a prominent middle clinoid process, and thus form a foramen for the transmission of the internal carotid artery.

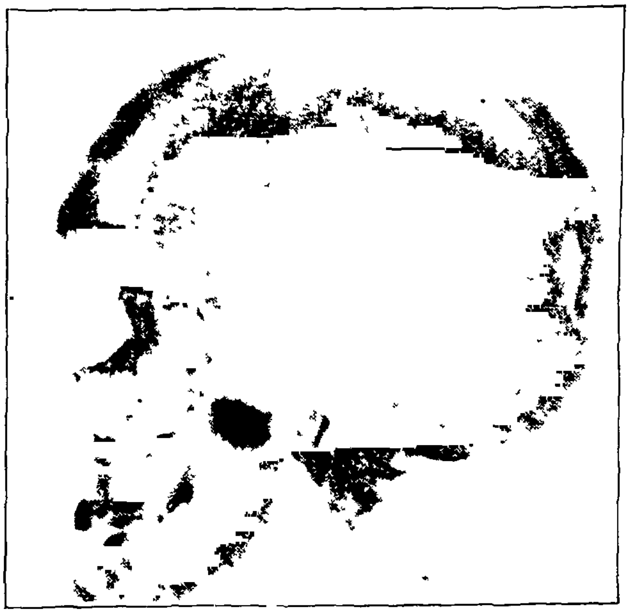

Fig 2—Normal sella: round type.

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* Read before the meeting on radiology in the Section on Miscellaneous Topics at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N J, May, 1925.

The posterior clinoid processes project anteriorly from the superior lateral portion of the dorsum sellae, which may vary from a broad, bony structure to a thin, atrophic structure. The latter is frequently mistaken for an eroded process, and if motion was present when the exposure was made, such a structure may appear eroded completely. Occasionally, when a thick dorsum sellae exists, the posterior clinoid processes are most inconspicuous and are represented only by the rounded upper border of the heavy bony base. This type of process is particularly common in children, as the sphenoid bone has not fully developed.

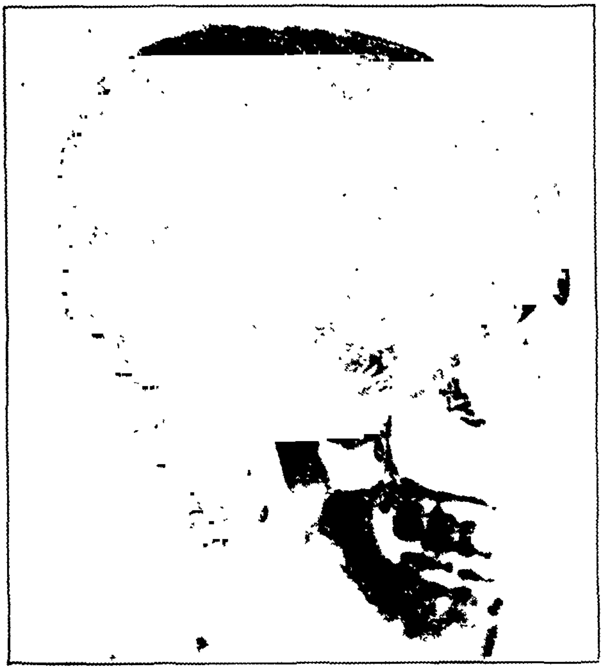

Fig. 3.—Normal sella: flat type.

Union between the anterior and posterior clinoid processes, with occasional inclusion of the middle clinoid, occurs in about 5 per cent. of necropsy specimens. This anatomic variation (Fig. 4) produces what is commonly referred to as a bridged sella. Roentgenograms of such a variation are quite misleading, as the shadow of the bony union, which is in reality just lateral to the pituitary fossa, is cast over the outlet of the sella and seems to enclose it and diminish its size. Such a deformity, as observed in roentgenograms (Fig. 5), has been cited from time to time as a cause for diabetes insipidus, epilepsy and migraine. When the anatomic relation of the anterior clinoid processes to the pituitary fossa is considered, especially the fact that these processes always pass lateral to this fossa and never over it, it is quite evident that the size of the pituitary fossa is not encroached on, and the theory of a union between the anterior and posterior clinoid processes producing pressure on the hypophysis, infundibulum or associated blood vessels seems quite improbable.

Aside from existing as an anatomic possibility, the appearance of a bridged sella may be produced in the roentgenogram by the superimposition of the shadows of the anterior and posterior clinoid processes. This may occur when the sagittal plane of the head is not placed parallel with the film or when the tube is incorrectly centered. An incorrect lateral position distorts not only the images of the clinoid processes but the contour of the sella as well, and under such conditions the pituitary fossa may appear unusually small or shallow.

The intimate relation of the sella turcica to the pituitary gland is no doubt responsible for the erroneous idea that all changes in its contour are the result of pituitary disease. While it is true that tumors of the pituitary produce well defined changes in the contour of the sella, there are so many other conditions capable of causing deformities in its contour that a failure to bear them in mind will often result in an erroneous diagnosis.

From the roentgenologic standpoint, the pathologic conditions producing deformities of the sella may be thus classified: 1. Intrasellar tumors involving the pituitary: (*a*) primary tumors, both benign and malignant; (*b*) metastatic tumors; (*c*) miscellaneous tumors, as gumma and tuberculoma. 2. Intracranial disease producing a chronic increase of intracranial pressure: (*a*) extrasellar tumors consisting of brain tumors, hypophysial duct tumors, meningiomas, osteomas and miscellaneous tumors, as abscess, aneurysm and cyst; (*b*) hydrocephalus, congenital and acquired; (*c*) craniostenosis with oxycephaly. 3. Disease of the sphenoid bone: (*a*) primary conditions, both benign and malignant; (*b*) secondary invasion by malignant tumors of the nasopharynx, metastasis, multiple myeloma and fracture.

Intrasellar tumors, as a result of their growth, enlarge the sella in a uniform circular manner, at the expense of the floor and dorsum sellae. The former is slowly eroded until a pouching into the sphenoidal sinus occurs, with a total destruction of the intervening bone. Roentgenograms at this stage show the outline of the floor to be represented by a double line. The higher line indicates the lateral border of the fossa, while the lower one is produced by the lower border of the tumor as it stands in contact with the air in the sphenoidal sinus. As the dorsum sellae is eroded, it first becomes concave on the anterior surface (Fig. 6), later straight (Fig. 7) and narrow, and finally is pushed backward by the increasing size of the tumor. In advanced cases, the dorsum sellae may entirely disappear, and under such circumstances it is difficult to differentiate the changes produced by a large pituitary tumor from those provoked by pressure from an extrasellar lesion. The anterior clinoid processes, because of their location slightly lateral to and above the origin of the tumor, are not so easily affected by its growth, and then not until it has reached a fair size. When involved, they are eroded from below and behind, with the production of short, blunt processes. The differentiation of benign

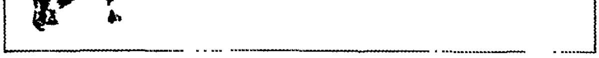

Fig. 4.—Necropsy specimen showing bony union between the left anterior, middle and posterior clinoid processes. The capacity of the pituitary fossa is not diminished by the presence of this anatomic variation.

and malignant pituitary tumors by means of the roentgenogram is impossible. The size and extent of deformity may arouse suspicion that malignancy exists, but such changes are not characteristic and are wholly unreliable.

By virtue of its location, a pituitary tumor is unable to produce an increase of intracranial pressure until it has reached considerable size; consequently, the presence of a uniform circular enlargement of the sella with thinning of the dorsum sellae and erosion and distention of the floor, without evidence of intracranial pressure changes in the rest of the skull, except in very advanced cases, is quite indicative of intrasellar tumor (Fig. 6).

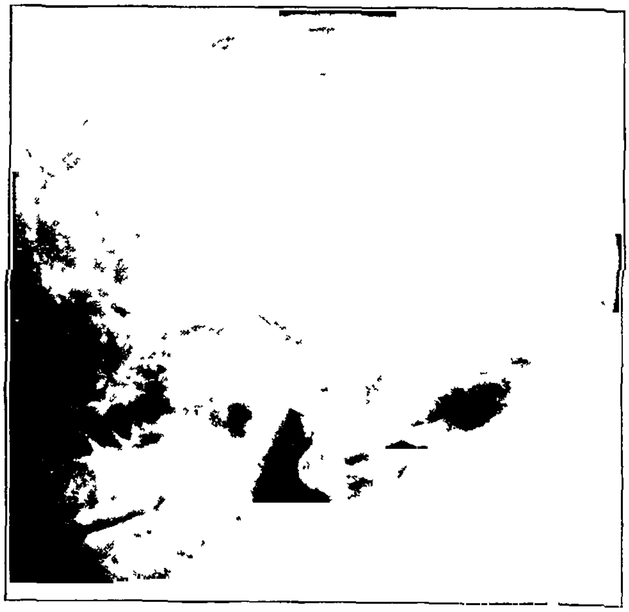

Fig. 5.—Bridged sella.

Any cerebral neoplasm that produces an increase of intracranial pressure by virtue of its size or ability to obstruct the ventricles will produce corresponding changes in the outline of the sella. The changes in this structure are the result of transmitted pressure, and appear simultaneously with the other pressure changes in the skull.

In contradistinction to the characteristic deformity of intrasellar tumors, the pressure associated with extrasellar tumors produces a widened and flattened sella (Fig. 8). As the pressure comes from above, the posterior clinoids are eroded from above, rather than anteriorly, and they become shortened and pointed rather than narrowed and thinned. The anterior clinoid processes are thinned and pointed rather than shortened and blunted. The posterior clinoids, owing to their erect position and central location, are more easily eroded than the anterior, and in cases of marked intracranial pressure may exist only as remnants of the original structures. The anterior wall of the sella and tuberculum sellae, being eroded from above, cause the outlet of the fossa to become widened and the depth diminished rather than increased.

The extent of destruction depends on the degree and duration of the pressure. When a large sphenoidal sinus exists, continued pressure produces complete erosion of the thin bone forming the floor, and only dura and sinus mucous membrane remain to separate the fossa from the sphenoidal air space. The earliest roentgenographic evidence is a haziness or indistinctness of the floor due to erosion and thinning of the bone. As the pressure continues and the erosion is increased, the sella loses its rounded contour, and the pituitary gland may be pushed partially into the sphenoidal sinus (Fig. 9). In children, in whom the sphenoidal sinus is not fully developed, and in whom the floor is formed by the basisphenoid bone, the erosion from pressure produces a marked cupping of this bone.

Hydrocephalus induced by causes other than cerebral neoplasm, because of its accompanying increased intracranial pressure, will produce changes in the sella exactly simulating those induced by extrasellar tumors. Deformities of the sella produced by increased intracranial pressure, resulting from such lesions as brain abscess, cerebral aneurysm, cysts or craniostenosis, cannot be differentiated in the roentgenogram from a deformity produced by other extrasellar lesions.

Disease of the sphenoid bone, either primary or secondary in origin, will produce a change in the roentgenographic appearance of the sella. Changes secondary to a malignant tumor, extending from the nasopharynx and invading the sphenoid, are most common (Fig. 10). In such conditions, the sphenoidal sinus is increased in density, and there is a haziness of the floor of the sella. Generally, unless the tumor has progressed to intracranial involvement, the contour of the sella is maintained, and usually the normal outline of the dorsum sellae and clinoid processes may be distinguished. Intracranial pressure changes in the skull are absent. Other conditions, such as tuberculosis, gumma, multiple myeloma, metastasis, primary malignancy, chordoma and osteoma of the sphenoid, are comparatively rare. With the exception of the shadows cast by osseous tumors, it is impossible to distinguish, by the sella changes alone, the other tumors of either primary or secondary origin. Occasionally a basal fracture of the skull is so directed through the pituitary fossa that a defect in contour may be seen in the roentgenogram.

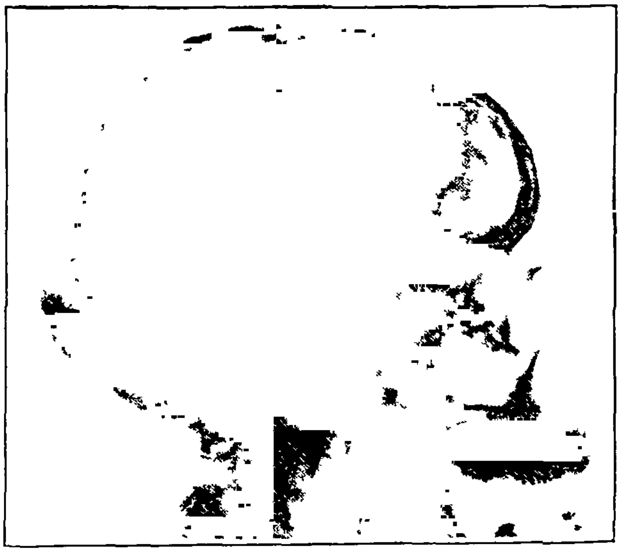

Fig. 6—Characteristic rounded deformity of the sella, produced by an intrasellar tumor. The dorsum sellae and posterior clinoids are eroded and thinned

SUMMARY AND CONCLUSIONS

1. Observations based on anatomic specimens and roentgenograms show the normal sella to vary in contour and size.

2. Variations in contour may be classed into three types: the round, oval and flat, of which the oval type predominates in the adult.

3. The average sella will measure 1.05 cm. and 0.81 cm. in the anteroposterior and vertical directions, respectively.

4. Variations in the shape of the clinoid processes are numerous, and union between the anterior, middle and posterior clinoids, producing a bridged sella, occurs in about 5 per cent. of cases. Such an anatomic variation seems to be of no clinical significance.

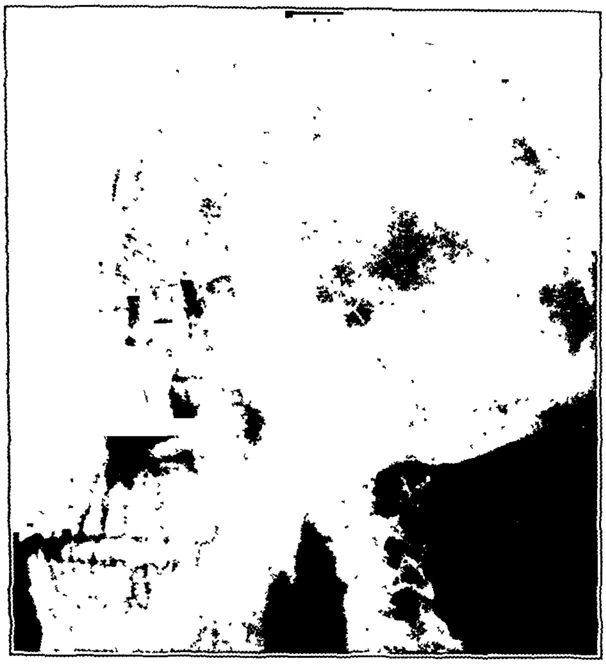

Fig. 7.—Deformity of the sella produced by a sarcoma of the pituitary gland: The dorsum sellae and posterior clinoids are eroded and displaced to a vertical position.

5. Pseudo-defects and apparent anomalies of structure are easily produced in a roentgenogram by faulty localizing technic.

6. Pathologic conditions producing changes in the sella are numerous, and the differentiation of these changes as to cause is often difficult.

7. Owing to the characteristic deformity of the sella usually produced by each, the differentiation between an intrasellar and an extrasellar lesion is generally possible.

ABSTRACT OF DISCUSSION

Dr. L. T. LeWald, New York: We are called on by neurologists to pass on cases of this sort, particularly pituitary epilepsy, pituitary headache, and the early diagnosis of brain tumor and acromegaly and similar conditions that may be, and are sometimes attributable to changes in the pituitary gland As to the bridged sella, I quite agree that the terminology is absolutely incorrect. I would offer as a substitute "closed sella," for the processes are not absolutely fused; they closely approximate each other. I am of the opinion that there may be an element of pressure on the pituitary gland; that is to say, as the gland is congested and circulatory changes are taking place, so-called pituitary headache will result if there is not allowance for expansion laterally as well as above. This fusion or tendency to closure laterally is of significance. In some of these cases, the result of treatment by pituitary extract has been improvement.

Dr. Isaac Gerber, Providence, R. I: I want to say a word about this fallacy of laying too much stress on the significance of fusion of the clinoid processes. Schiller of Vienna, who perhaps knows more about the matter of the sella than any other man living, absolutely contradicted Johnson's views as far back as 1913. Since then he has had hundreds of cases, which he has been able to check, that absolutely contradict that point of view. The trouble about it is not that *it is an academic proposition, but that in this matter of* attributing important endocrine disturbances to slight differences *in the appearance of the sella*, there has been an enormous mire of pathology as well as a bizarre organic therapy developed. The chief offenders are very prominent endocrinologists, officers of very prominent national societies. I have seen over and over again cases in which I and other roentgenologists were able to see absolutely normal sellae with simple differences that were within normal limits, and because there were endocrine disturbances demonstrable in the patient, these eminent endocrinologists were able to point particularly to what they *termed pathognomonic* changes in the sella which they considered were part of the pathologic symptoms, or even the causation of the endocrine disturbance. I thought that this whole matter was pretty well settled, that these normal variations took place in sellae and had nothing to do with endocrine disturbances, but I see it is worth while bringing out that phase again and not allow ourselves to fall into the error of "post hoc, ergo propter hoc," that, merely because a patient has an endocrine disturbance, a normal variation in the sella necessarily has anything to do with it.

Dr. Henry K. Pancoast, Philadelphia: I should like to second the remarks just made by Dr. Gerber and to sound a warning with him against reading into practically normal roentgenograms evidence of endocrine disturbances. I was very glad to hear Dr. Camp's remarks about the measurements of the normal sella. For a number of years I have been doing the same thing, and we now have collected several hundred normal cases. In every head case that we examine, we measure the sella by a special technic, and if the head is normal we register the sella measurements. A great deal will depend on the technic that is used. We always expose at a distance of 36 inches. I believe that is a sufficient distance. The problem is quite different from making a six or seven foot plate of the chest. The central rays, of course, must be directed through the sella so as to have the clinoid processes superimposed. Our average normal measurements are practically the same as Dr. Camp's normal—something over 10 mm. The top normal size is 12 mm. with us, and anything over that we regard as beginning to

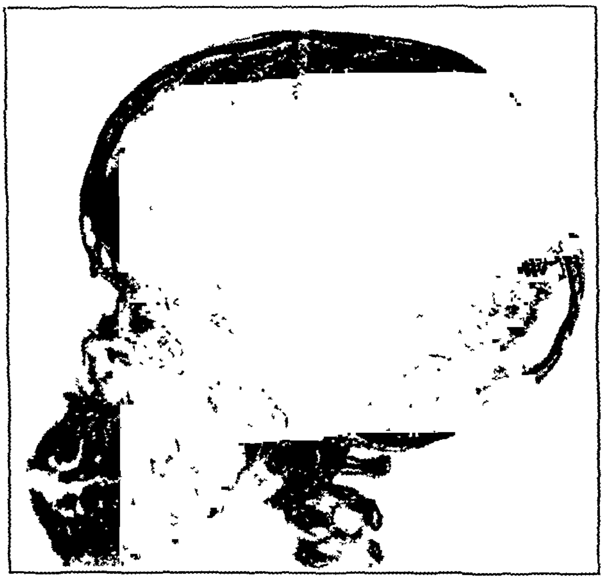

Fig 8—Characteristic flattened deformity of the sella produced by an extrasellar tumor (glioma of the cerebellum). The pointing of the anterior clinoid processes is well defined.

be abnormal. I am also very glad to hear what has been said about the bridged sella. I have never believed that this appearance implied encroachment on the sella turcica. It is entirely a lateral affair, and the pituitary body has plenty of room, notwithstanding the fact that we see in our lateral views an apparent bridge. It is unfortunate that we are unable to obtain any other satisfactory view than the lateral view of the sella turcica. Possibly some time we may be able to obtain one that will show the lateral dimension as well as the anteroposterior dimension.

Dr. M. D. Gordon, Brooklyn: Dr. Bell and I did some work on the sella turcica in normal subjects, and we classified them according to the classification that Dr. Camp used. We found, in studying the endocrine disorders of children, absolutely no variations from the normal. As far as the shape is concerned, the classification of A, B and C held good in the abnormal children as well as in the normal, with this variation, however, that while in the normal children we found that we had an increase in the number of the round cell, or the Group A, as we termed it, in the abnormals, we had an oval predominance. The differentiation between Group A and Group B, between the round and the oval, is very difficult at times to make. Dr. Camp found that the oval predominated in adults, and we found that the round predominated in children. That really does not make very much difference, because in our second series, the oval and the round occurred in about the same proportion. The most important thing to remember is that the round and the oval do predominate in both adults and children. The flat type or the saucer-shaped type was present in both our series and Dr. Camp's series—normal and abnormal—in only between 10 and 15 per cent. The next important thing was the question of the excavation which was reported by Timbie as being pathognomonic of mongolian idiocy. We could not differentiate between mongolians, myxedematous idiots, hydrocephalics, microcephalics, morons, or any of the types of abnormal children. In fact, we could not differentiate between abnormal and normal children. In both series, 79 per cent. showed an excavation. We feel that there is absolutely nothing in the sella turcica, as far as a roentgen-ray picture is concerned, that is of any significance at all from an etiologic or from a diagnostic point of view. As far as endocrinology is concerned, it has absolutely no bearing on organotherapy or on the function of the pituitary, because the excavation is anterior to the sella turcica and has nothing to do with the sella turcica itself. The number of cases in which bridging showed was very small, and did not count at all in the symptomatology. As far as pituitary disease was concerned, we found no change at all in the sella turcica which would give any clue at all as to the symptomatology. We found no larger shapes or smaller shapes in pituitary or hypothyroid or goiter cases. In other words, our goiter cases did not give us a larger sella than our hypothyroid cases. The size did not mean anything at all. We could not tell by the size what our symptomatology would be.

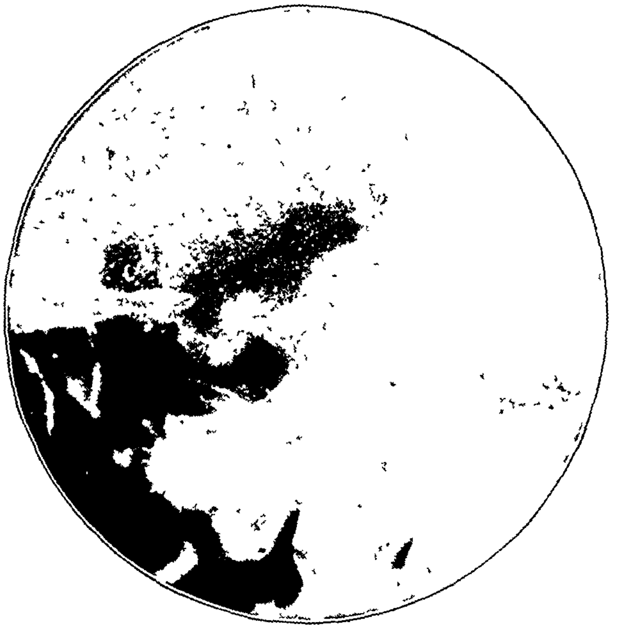

Fig. 9.—Erosion of the sella and displacement of the pituitary gland into the sphenoidal sinus, resulting from increased intracranial pressure from a neurofibroma of the right acoustic nerve.

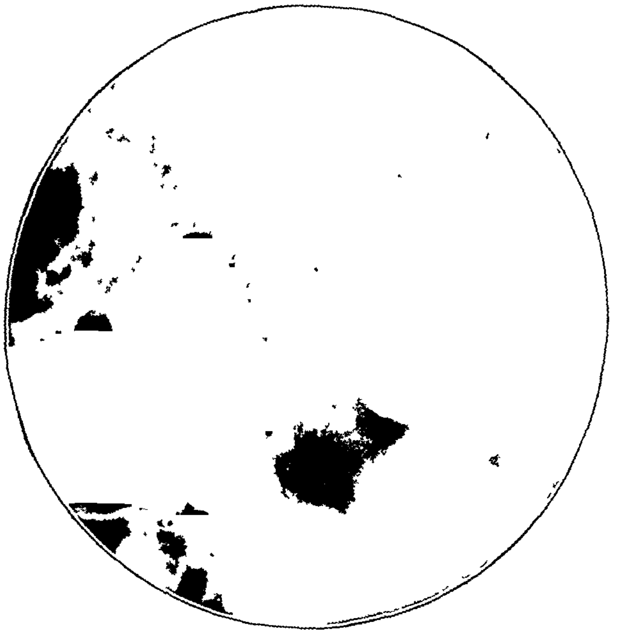

Fig 10.—Clouding of the sphenoidal sinus and partial destruction of the sphenoid bone produced by a malignant tumor extending from the nasopharynx. The dorsum sellae and posterior portion of the floor of the sella are still faintly visible.

Dr. John D. Camp, Boston: Dr. LeWald has brought up the question of a bridged sella. This is always very interesting to me because it is the reason that I happened to start this work. A very prominent pathologist remarked that he did not think that the presence of a bridged sella had anything to do with these conditions, and because a certain neurologist told him he thought they had, he asked me whether I would not undertake this problem and find out. I have seen some cases of dyspituitarism in which bridging of the sella showed in the roentgenogram; but before undertaking this work, we ran through a large series of controls. It was surprising to see the cases in which bridging of the sella was shown. Our average was about 5 per cent. In my series on necropsy specimens, I was able to find seven cases in which bridging of the sella showed on one side or the other. In one specimen bridging showed on both sides, and in none of these seven cases were they symptoms which could be referred to endocrine disorders of one kind or another. So that after considering all the cases which showed bridging of the sella and also considering those which had some pituitary disturbance, we came to the conclusion that bridging occurred so frequently in normal persons that its occasional presence in patients showing endocrine disorders was nothing more than a coincidence.

Insanity and Delinquency.—Just as mental defect explains a small percentage of delinquency, so does insanity; but it accounts for only a small percentage—not more than 0.5 per cent of all cases It must be kept in mind, and also the fact that dementia praecox is often closely allied to mental defect, and sometimes difficult to distinguish. At the present time there is a further difficulty, owing to the not infrequent sequelae of encephalitis lethargica that come along.—Potts, W. A.: *J. Ment. Sc.* **71**:679 (Oct.) 1925.

NEURO-ARTHROPATHIES OF PERIPHERAL NERVE INJURY ORIGIN

REPORT OF TWO CASES *

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In a previous communication we [1] reported an interesting example of a neuro-arthropathy of peripheral nerve origin. Since its publication, a fortuitous circumstance has permitted us to place on record another instance of this little understood joint anomaly. Before proceeding with a detailed description of the two cases observed and their subsequent course, it will be necessary, for a clearer understanding of the subject of neuro-arthropathies in general, to quote in part from our former publication.

> The association of bony changes—limited principally to joint structures—with grave disease of the central nervous system has been observed for a great number of years. The recognition of such structural osseous anomalies occurring in the course of tabes and syringomyelia was given impetus by Charcot, who was the first to describe them accurately. Thus the term Charcot joint found universal acceptance in the literature and was readily interpreted as a destructive arthritic process dependent on and secondary to involvement in a disease process of certain fiber tracts in spinal cord parenchyma. As tabes and syringomyelia were apparently the only affections that developed such arthropathies fairly consistently, it was readily assumed that they were peculiar to these diseases only and that such profound joint changes could develop on no other basis.
>
> The advent of the roentgen ray served further to emphasize the existence of these arthropathies, since the diagnosis could be made quite early before they are demonstrable clinically and before grave destructive changes take place. The assumption that they existed only in association with such diseases of the central neural axis as tabes and syringomyelia seemed justifiable, since these arthropathies were never observed in any other condition. The routine use of the roentgen ray in bone and joint conditions, however, revealed the fact that affections other than those heretofore mentioned were capable of setting up changes in joints comparable to the classic arthropathy of Charcot, and it is of these in particular that we wish to speak.
>
> That this possible widespread misconception of neuro-arthropathies may have great potentialities for harm makes it imperative that its existence be recognized outside the domain of the tabetic or syringomyelitic patient. The detection of a neuro-arthropathy presents no special difficulties and need not be dwelt on. Confusion will arise, however, when such an instance presents itself in the absence of the accepted orthodox diseases that create neuro-arthropathies. This state of affairs occurred in the patient studied by us, and the misinterpretation of the negative neurologic and serologic findings led his previous medical advisers to perform an unnecessary joint operation for suspected malignancy.

The foregoing quotations should serve in the main to foster the conception that we have ventured to formulate, that a neuro-arthropathy may be wholly the product of peripheral nerve disease or injury. The theoretical considerations of the mechanism that may bring about such destructive changes in the joint were dwelt on in our earlier communication and need not be repeated here.

The incidence of neuro-arthropathies of peripheral nerve injury origin is interesting and startlingly high. During the last four years, twenty-five patients with neurotrophic joints were observed. Of this number, twenty-two were of the classic Charcot form in tabes. One of them was caused by syringomyelia, and two of them were of peripheral nerve injury origin. None were attributable to spinal injuries or anomalies, a cause stressed by continental writers. Of considerable significance is the fact that in reviewing, quite recently, a large series of spinal anomalies and fractures observed over several years, we were unable to find a single case of associated neuro-arthropathy.

We will omit from present consideration arthropathy of central origin, i. e., tabes and syringomyelia, and, since our interests have been centered largely on the form that is of peripheral origin, we will present a clinical concept of the type under discussion. We are obviously not concerned with the arthropathies secondary to nerve injuries as a result of warfare, since these have been ably described by continental writers and mentioned in our earlier publication. What we have in mind is the type that is the product of the stresses and traumas of civil life.

INCIDENCE

The condition, as we have observed it, occurs in laborers subjected to prolonged or repeated severe muscle strain or severe traumas to the joint, either by direct or by indirect violence. Undoubtedly this must in some inexplainable way compromise the peripheral neural mechanism, which in turn initiates the destructive changes in the joint. Slight disability follows an injury or strain of unusual severity. This gradually diminishes to such an extent that, in one case, the original injury was forgotten, whereas, in another instance in which the injury was more severe, the disability was more profound and lasting and merged into that caused by the arthropathy.

The condition develops very insidiously with moderate disability. Little, if any, pain is present. A progressive swelling of the joint ensues, which may attain considerable proportions. The disability that ultimately supervenes is apparently the result of the mechanical factors secondary to the marked periarticular swelling and disorganization of the joint. Pain may be entirely absent, just as in the neuro-arthropathies of central origin.

PHYSICAL EXAMINATION

The physical examination reveals a markedly swollen joint with distended synovial sacs. The skin is tense and glossy, and the veins may be prominent over the joint. The appearance physically simulates to no slight degree a malignant tumor. However, the striking absence of pain and tenderness during manipulation of the joint serves to call attention to the neurogenic nature of the condition. The neurologic examination and the blood and spinal fluid findings yield negative data, and finally the roentgen-ray appearance furnishes convincing evidence of a neuro-arthropathy.

DIAGNOSIS

The diagnosis, therefore, may be made by a combination of positive roentgen-ray and physical findings, and negative neurologic and serologic data, with a history of delayed onset after an injury. We have ventured to regard this form of neuro-arthropathy as a new clinical entity.

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* Read before the Section on Orthopedic Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Philips, H. B., and Rosenheck, Charles: Neuro-Arthropathies: A Consideration of the Etiology and the General Characteristics, J. A. M. A. 82:27 (Jan. 5) 1924.

SUBSEQUENT COURSE

The subsequent course cannot be stated definitely for the obvious reason that the original case we described has been under observation only two years, and our recent case one year. The patients at present are both doing hard work, and apart from the disability incidental to the mechanical disturbance previously mentioned, apparently suffer no discomfort. The history of our second case may now be cited.

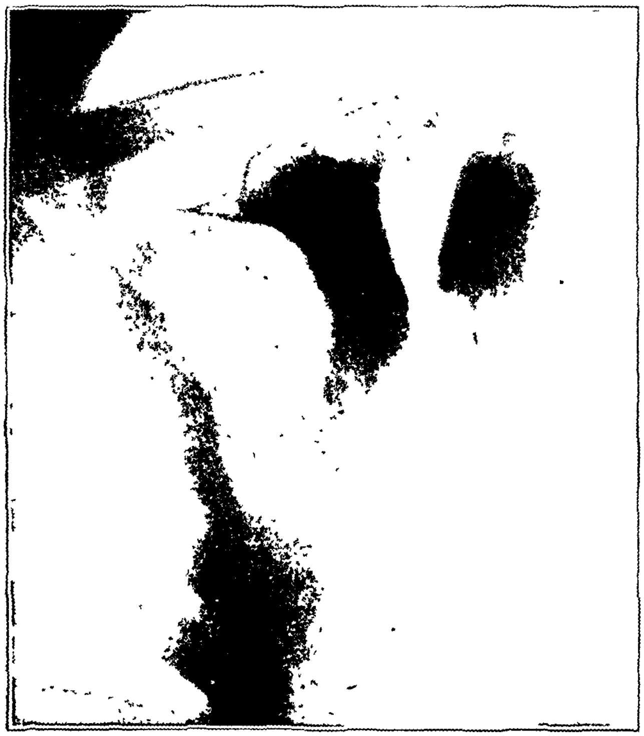

Fig. 1 (Case 1).—Neuro-arthropathy of peripheral nerve injury origin, showing the condition four months after the injury

History.—J. B., a man, aged 42, applied at the clinic of the Hospital for Joint Diseases in April, 1924. The family and previous histories were entirely negative and irrelevant. He had worked for several years in a lumber yard, carrying planks on his shoulder. His work was hard and strenuous. In January, 1924, several pieces of heavy lumber fell 12 feet, striking him on the left shoulder. He continued to work for two days, when the swelling and loss of motion made work impossible. This condition continued for three months, with pronounced swelling of the shoulder; then gradual retrogression of the pain took place, but the patient was not able to return to work for ten months after the injury, as a result of the swelling and limitation of motion.

Examination.—The patient was robust and well nourished, with fine muscular development. The examination was entirely negative, except for the left shoulder girdle, which was markedly swollen, the skin over it being tense and glossy. There were no enlarged cutaneous veins present. The temperature of the shoulder region was not elevated. Pain was present to a very slight degree when the shoulder was subjected to the strain of extreme positions. Crepitus was present. The shoulder joint, as well as the bursae of the shoulder, was markedly distended. Extreme abduction was impossible, actively, but there were no limitations to any motion or position passively.

The roentgen-ray examination (Fig. 1) showed a typical neurotrophic arthropathy, with disorganization of the internal third of the head of the humerus, with considerable bony joint detritus. There was a dense productive osteoperiostitis of the outer end of the clavicle and acromion process of the scapula. There was no bone atrophy in any portion of the shoulder girdle. The joint capsule was distended, and marked periarticular soft tissue swelling was present. The Wassermann reaction on the blood and spinal fluid was negative. The aspirated fluid from the joint was negative for any information of value and was inoculated into a guinea-pig with no effect.

A neurologic examination was thoroughly negative in every way. Further roentgen-ray examination of the spinal column showed no abnormalities.

Subsequent Course.—Treatment of the patient was palliative with physiotherapy. Gradual retrogression of the swelling and disability took place, so that the patient returned to work about ten months after the injury.

An examination in April, 1925, one year after the first observation, showed restoration of all function except complete abduction (90 per cent. was the limit without assistance). Most of the swelling had disappeared. The patient had not experienced any pain for more than six months and had resumed work about six months previously. Neurologic examinations continued to be negative in every respect. A roentgen-ray examination showed very little, if any, change in the shoulder joint, except for the disappearance of the marked periarticular swelling. Crepitus was still present. Pain was absent, and there was no disability except limitation of extreme abduction, apparently mechanical. The muscles of the upper arm and shoulder were of undiminished development with undiminished power and vigor.

It may also be of interest at this point to outline briefly the history of our original published case.

History.—H. O., a man, aged 30, whose chief complaint was incapacity from a markedly swollen condition of the left shoulder girdle, for the past seven years had been an ice and coal dealer, frequently carrying from 50 to 100 pound loads on his shoulders. Occasionally he was compelled to drag 300 pounds of ice unassisted. Six months before we saw him, the patient wrenched his left shoulder while pulling 300 pounds of ice. Cups were applied, and he returned to work the same day. Two months later, he noticed a moderate swelling of the left shoulder, with slight limitation of motion of the left arm. He recalled having no pain in the shoulder at this time and only very slight pain subsequently. He continued with his work for seven weeks longer, when he consulted his private physician for the first time. He was told he had "water on the shoulder," and was referred to the Hospital for Joint Diseases.

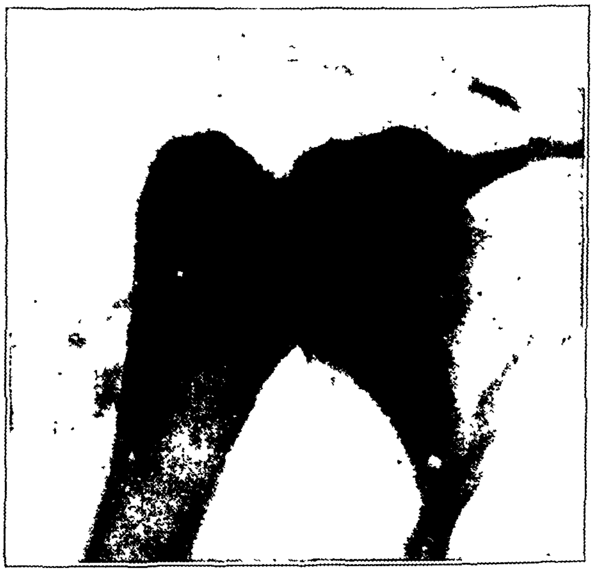

Fig. 2 (Case 2).—Neuro-arthropathy of peripheral nerve injury origin, showing the condition six months after injury.

Examination.—Feb. 19, 1923, the patient was very robust, well nourished, and of good color. The physical examination was entirely negative except for the left shoulder girdle, which was considerably enlarged. The superficial veins over the shoulder and the front of the chest were greatly swollen. No discoloration was present, but the skin was tense and glossy over the swelling. Movements of the shoulder were not interfered with except in extreme abduction. No lymph nodes were palpable. A careful neurologic examination revealed no demonstrable abnormalities in either the central or the peripheral neural mechanisms. A blood Wassermann reaction was negative.

A roentgen-ray examination (Fig. 2) revealed the shoulder joint disorganized, with extreme destruction of the head and neck of the humerus, of the distal end of the clavicle and of the end of the acromion process. There was considerable joint detritus present from the destroyed articular ends of the bones forming the shoulder girdle. There was no bone or soft tissue atrophy; on the contrary, there was marked soft tissue tumefaction about the joint. The appearance of the shoulders was characteristic of neuro-arthropathy.

Subsequent Course.—The condition, locally, presented preponderant signs of an extensive *malignant tumor. This diagnosis* appeared all the more tenable in view of the negative neurologic examination and serologic tests. However, the roentgenograms positively excluded malignancy and were sufficiently characteristic to permit of a positive diagnosis of a neuro-arthropathy, in the face of all other conflicting data. On the basis of the report of the roentgen-ray findings, the patient was treated conservatively and advised to return regularly at two-week intervals for further observation.

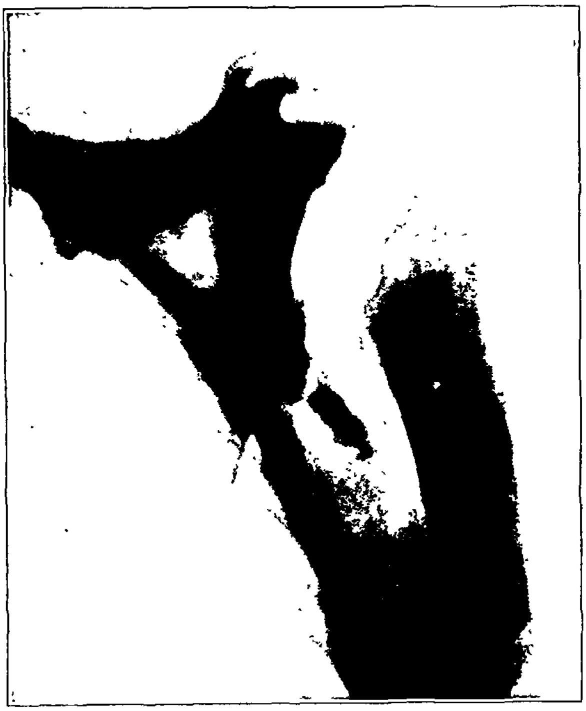

Fig. 3 (Case 2).—Neuro-arthopathy of peripheral nerve injury origin, showing the condition two years after the injury. An operation for removal of joint detritus has been performed during the interval.

Not satisfied, however, with palliative treatment, the patient went to another hospital, where he was examined and roentgenograms were taken. He was advised to submit to an extensive shoulder amputation next day. His relatives were informed that he had cancer and could not possibly live more than eight weeks. He was taken home immediately, and on the next day was taken to another and larger hospital. The condition here also was considered to be malignant and after a few days of observation, an operation was performed on the shoulder, and some of the joint detritus was removed. Radium was inserted into the joint and removed six hours later. The patient remained in the hospital for twenty-seven days.

After examining sections of the excised tissues, Professor Ewing reported them as being nonmalignant.

While in the hospital, the patient began to notice swelling of the right shoulder joint, accompanied by slight discomfort and limitation of motion.

A few days after his discharge from the hospital, he appeared at our clinic. The left shoulder presented a well healed linear scar from the operation, with, however, little change, if any, in the appearance of the immense swelling of the left shoulder girdle. In addition, the same condition but to a lesser degree was present in the right shoulder. Roentgen-ray examination of the right shoulder girdle showed the presence of a neuro-arthropathy of less intensity than that previously observed on the left side.

The patient has been observed at monthly intervals since the operation, and the bilateral condition has remained unchanged in both the physical and the roentgen-ray appearance.

The last examination was made, April 15, 1925. There was slight limitation of motion in the left shoulder in extreme abduction, but otherwise a normally functioning shoulder joint. The original swelling was all gone; the large veins were still present. Muscle power was vigorous and undiminished. Crepitus was present in the right shoulder, with a fair range of motion and undiminished pulling, pushing, abduction, rotation, etc. No pain or tenderness was present.

The roentgen-ray examination (Fig. 3) showed little, if any, change in the appearance of either shoulder during the two years from March, 1923. In the interval the patient had been working almost as hard as originally and at the same kind of work. The work was extremely strenuous. He had felt no pain and no fatigue. He had enjoyed good health, slept well, his weight had been the same and he had felt well in every way, except for inability to abduct his left arm completely.

The neurologic examination was essentially negative, with the possible exception of an apparent lack of power in executing various gross upper and lower arm movements. Since the electrical reaction showed no deviations from the normal, and since there was no atrophy and there were no sensory changes, one must attribute this apparent lack of power to the joint condition, since proper fixation of the head of the humerus (which had disintegrated) in the glenoid socket is impossible.

In this connection it may not be inopportune to cite briefly the details of a third case which came under observation but which we are not including in our series on account of a complicating tuberculous factor.

History.—A young man presented himself at our clinic with a markedly swollen elbow that had been injured severely fifteen months before. Roentgen-ray and physical examination after the injury showed no evidence of fractures. Pronounced swelling was present, with distention of the synovial sacs. There was no increased heat in the part, no muscle spasm, nor any significant degree of pain or incapacity.

Roentgen-ray examination showed a typical neurotrophic joint; no atrophy was noted, but considerable joint detritus was present. Aspiration of the joint secured a brown-colored fluid with an admixture of pus. The smear showed only pus cells, but proved to contain tubercle bacilli by inoculation test. The possibility of a tuberculous joint infection superimposed on a neuro-arthropathy was considered for the following reasons: There was no physical or roentgen-ray evidence characteristic of tuberculosis. Physically and roentgenologically, the condition was clearly one of neuro-arthropathy.

A diagnosis of simple uncomplicated tuberculous arthritis is untenable in this case, notwithstanding the presence of tubercle bacilli. We have ventured in this instance to regard the tuberculous infection as a secondary invasion after the development of the neuro-arthropathy for the following reasons: the history of the injury, the rapid and painless development of the symptoms and the characteristic physical and roentgen-ray findings. By way of comparison, we may mention that it has been our privilege to study a secondary tuberculous infection in a typical Charcot ankle joint, which this case simulates in many respects.

TREATMENT

In view of our limited experience with this type of neuro-arthropathy, we are not in a position to suggest treatment with any degree of confidence. It is essentially symptomatic. Physiotherapy, immobilization and operations have been performed but, as far as we can determine, without especial advantages or benefits. We feel that, after the condition has reached a state of equilibrium, operative intervention for removal of joint bodies and possible joint reconstruction is indicated and should prove useful. Beyond this, we can only advise symptomatic and palliative measures.

CONCLUSION

We shall take the liberty to quote again with slight modification from our previous publication: "In the light of the facts heretofore presented, it is our opinion that neuro-arthropathies caused by peripheral nerve injury or other factors not definitely understood occur with more frequency than is usually believed. It is our opinion that these neuro-arthropathies are possibly misinterpreted on account of the absence of demonstrable disease of the central nervous system. In the wake of such misinterpretation, extensive joint operations may be performed unnecessarily as in the case cited. The possibility of neuro-arthropathy should always be considered in obscure or ill defined joint manifestations, even in the absence of cord disease. The etiology may be found in disturbances of the peripheral neural apparatus or other hitherto unknown factors."

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ABSTRACT OF DISCUSSION

Dr. Reginald H. Sayre, New York: I recall a case demonstrated by my father when I was a student. This man had struck his knee against a trough. He developed a condition which had all the outward and general manifestations of a Charcot's joint, but which my father regarded as being due to the traumatism. I simply put that down to my father's failure to recognize that the man had syphilis. Until hearing this paper this morning, I had concluded that was an error of omission on my father's part, and that he apparently did not know a Charcot's joint when he saw it. Possibly he was wiser than I, and knew it was not a Charcot's joint. The question of operating on supposed malignant joints is interesting. It is somewhat similar to these cases of giant cell tumors which are operated on for amputation on the supposition that they are malignant, which are later found not to be malignant and to do perfectly well with conservative measures. This is a new series of cases which may yield to conservative instead of radical treatment, as we have seen.

Dr. A. W. Adson, Rochester, Minn.: In view of the roentgen-ray findings and the negative neurologic findings, the question might be raised as to whether it is possible that the nerve at the head of the humerus has been injured or that thrombosis of the artery supplying the humerus has occurred rather than a gross lesion of the brachial plexus. The remarkable fact is that both patients made a spontaneous recovery.

Dr. W. C. Campbell, Memphis, Tenn.: We have a great many cases in which the brachial plexus has been severed. injured or evulsed at the cord. I do not think I have ever seen atrophic change of this type following such injuries. They are certainly two interesting cases in which the roentgen-ray appearance is very suggestive of Charcot's joint, or of that type of joint. Just what the condition is, I cannot conclude.

Dr. Charles Rosenheck, New York: It was my privilege to make the neurologic examination in these cases. One must rid oneself of the traditional conception held forth by Charcot that all types of neuro-arthropathies are the result of central nervous disease, such as syringomyelia or tabes. It is very true that the vast majority of the cases we see are the product of syringomyelitic changes or sclerosis of the posterior columns. Virchow some time later than Charcot found changes of a deleterious character in bones and joints following peripheral nerve injury, but no particular attention was paid to him at that time. It was really the war, with its rich array of neurologic material and peripheral nerve injuries, that brought forth the fact that the so-called Charcot's joint, or the neuro-arthropathy, could exist independent of disease of the central nervous system. As a result of my examination of these two cases I would put the Charcot's joints in three categories: One is the type occurring following central nervous disease, after syringomyelia or tabes; the second is a result of plexus or root injuries; the third is the type under consideration here, in which there is absolutely no evidence of any neural defect. What is the explanation of that? One can readily understand, of course, that certain trophic changes have occurred; but why this occurs here, I do not know. In a previous communication, we hinted at the fact that it might possibly be due to the disturbance in the neural nutrition of the joint, whatever that may mean. It is hypothetic, but it is the best that one can offer. If it is a fact that this occurs, why is it not seen more often? We see a great number of joint injuries and joint infections, but no evidences of neuro-arthropathy. Possibly it is the peculiar nature of the injury and the peculiar constitutional predisposition of the individual that determines this type of neuro-arthropathy, such as one sees in tabetic and syringomyelitic patients. One sees a great many tabetic patients, and there are no evidences of arthropathy.

Dr. Erik St. J. Johnson, Boston: During the past year I have examined a large number of more or less indefinite mysterious yet apparently definite joint cases for the United States government claims at the orthopedic clinic, U. S. Veterans' Bureau, in Boston. These cases included shoulders, elbows, wrists, back, knees and ankles, but chiefly shoulders and knees. In all cases an indefinite story of trauma or infection was present, difficult to prove or make fit together as regards official or legal facts. In most of the cases, roentgen-ray findings were negative, and objective findings few. Subjective findings, including pain, stiffness and weakness associated with swelling of soft tissues, had been recurrent at different periods since discharge from service. These recurrences would invariably mean a loss of earning time and treatment for longer or shorter periods involving all sorts of claims. A most thorough exhaustive examination would fail to reveal any significant pathologic condition during quiescent periods. Active periods were almost always associated with financial and business strain, family matters and often depleted general health with no definite localized toxic focus. In absence of definite proof of disease or injury, I believe that these cases must be classified as neuro-arthropathies with definite decrease of neurotrophic and circulatory tone of the affected joint, dependent rather more on psychomotor circulatory factors as a cause or an aggravation than on clearly demonstrable results of trauma or infection.

Dr. H. B. Philips, New York: I do not blame any one for feeling somewhat skeptical, and not accepting everything as stated. We had quite a hard job in firmly establishing the diagnosis of this condition because, as Dr. Rosenheck expressed it, we have to reconsider entirely our concept of neuro-arthropathies—that they may be caused by peripheral nerve injuries; and, as Dr. Johnson stated, the further we go along the more we are going to recognize this condition and find its incidence greater. I should like to quote from the article that "in our experience the incidence of these injuries, due to peripheral nerve injury, is twice as high as syringomyelia." I feel that the condition has been overlooked heretofore because of the error in previous teaching that we can't have neuro-arthropathies without previous central nervous disease.

RELIEF FOR THE PAIN IN CARCINOMA OF THE FACE*

FRANCIS C. GRANT, M.D.
PHILADELPHIA

Extensive carcinomatous involvement of the mouth and cheek presents many difficulties in treatment. Particularly is this true if the malignant growth presses on the sensory nerves in this area. Even if pain is not a prominent factor before treatment is begun, it is sure to be severe afterward. If extensive resections are attempted with the thermocautery, if radium needles or tubes are inserted, or if intensive roentgen-ray exposure is used, the reaction set up is almost inevitably painful. The pain is constant, night and day, without remission. It may not be severe, but because it is ever-present, the sufferer's morale is slowly broken down, he dreads the necessary inspections and manipulation of his wound, and he becomes increasingly difficult to treat. Nowadays, with the educational campaign carried on against cancer, the general public is well informed as to its manifestations and prognosis. Cancer about the oral cavity is a filthy condition at best. Even if there were no pain, the sloughing surface in the mouth, the foul breath, constant salivation and interference with eating would be difficult to bear; but, when coupled with constant pain and the knowledge that cancer is present with all that this implies, it is not strange that these patients form a most pitiful class who tax all our skill to handle successfully.

Pain is their chief complaint. It is to the relief of this pain that our efforts should be directed. If this can be done, proper treatment may be carried through without torturing the patient. He will submit to it willingly. Once pain free, he can take nourishment in normal amounts. His strength and resistance are preserved to aid him in combating his disease. In these cases, in which from experience it is known that the treatment may cause perhaps more suffering than the lesion itself, the proper course to follow is, first, to render the area to be treated pain free by blocking the sensory nerves that supply it. This is easily done. No time need thus be lost in attacking the cancerous region, for the routes along which the sensory pathways are interrupted may be placed well away from it. Once anesthesia is established, we may proceed against the lesion by whatever method we choose, certain that we are not adding to the burden of pain that the sufferer has to bear.

Fig. 1.—Anesthesia following intracranial neurectomy, second and third divisions, fifth nerve; pain in side of the face following a carcinomatous lesion on the cheek; complete relief from pain for eight months, followed by return of pain for one month with death from metastasis.

The trigeminal nerve with its three divisions is the predominant sensory supply of the face. The larger number of painful cancerous growths lie within its distribution; but when the tonsil or base of the tongue is involved, pain may be present deep in the ear or on swallowing. This pain seems due to glossopharyngeal involvement. The recent work of Doyle and Adson[1] on glossopharyngeal neuralgia shows that under these conditions, by section of this nerve, relief may be secured.

When the growth lies below the level of the mandible, the cervical nerves become implicated. Recently, we have seen two cases in which there were large carcinomatous masses in the neck just beneath the jaw. Both patients complained of severe persistent pain in this region. The lesion in each instance involved the deep as well as the superficial structures of the neck, making it impossible to dissect out the cervical nerves as they pass forward over the sternomastoid muscle. Surgery in the region of the growth seemed contraindicated lest new tissue planes be opened up to metastases. Fay has suggested that a laminectomy be performed and the posterior roots of the first, second and third cervical nerves be sectioned intradurally where they leave the cord. This has now been done in two cases, with complete relief of pain. The procedure may seem a formidable one to accomplish the desired result, but experience proves it otherwise. Neither subject was a good operative risk; both were elderly with beginning cachexia, and by a judicious use of local and general anesthesia and close attention to hemostasis, they were carried through successfully. Laminectomy is not a difficult operation. The posterior roots are easily identified and crushed as they leave the cord. We believe this to be the method of choice in relieving pain from malignant growths in the neck which have so involved the structures that dissection of the superficial nerves in the posterior triangle is not advisable.

Fig. 2.—Cautery knife excision of carcinoma of maxillary antrum; following ligatation of external carotid artery, avulsion of the sensory root of the fifth nerve; no anesthesia required for excision of growth or subsequent dressings. Patient alive and pain relieved five months after procedure.

Since by far the greater number of subjects with painful cancerous lesions of the face refer the pain to the trigeminal distribution, it is with this nerve or its three terminal divisions that we have most frequently dealt. In this series of thirty-five cases (Table 1), in only seven was pain located outside this area. Six of the patients complained of pain in the ear, behind the ear and on swallowing. In reviewing the cases it seems as though in these instances section of the glossopharyngeal nerve should have been performed. Successful injection of the second and third divisions of the trigeminus and avulsion of its sensory root did not afford the patients much relief. In this connection, it must be remembered that in these cases there may be two types of pain. The major suffering may be referred to the lower jaw or tongue, and may be checked by blocking the mandibular division with apparent freedom from pain for a short period. Less pain remains when the patients swallow, and a dull ache in the ear is frequently noted. These symptoms were present in the beginning but were masked by the greater pain in the jaw or tongue. Because of their persistence, they become as distressing as was the pain that has been relieved. The anesthesia produced by the injection eventually may actually accentuate the deeper agony. Lesions of the base of the tongue or the pillars of the tonsil most commonly cause aural or pharyngeal pain.

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* Read before the Section on Stomatology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* From the Neuro-Surgical Clinic of the University of Pennsylvania Hospital, and the Post-Graduate Hospitals of the University of Pennsylvania.

[1] Adson, A. W: Surgical Treatment of Glossopharyngeal Neuralgia, Arch. Neurol & Psychiat. **12**: 487 (Nov.) 1924.

Table 1.—*Summary of Cases*

Location of Growth	Number of Cases	Treatment	Result
Maxillary antrum and upper jaw	14	Alcohol injection, third nerve	Pain relieved (2 cases)
		Avulsion of sensory root.	Pain relieved; died of meningitis, 10 days (1 case)
		Alcohol injection, second and third nerves.	Pain relieved (2 cases)
		Alcohol injection, second nerve	Pain relieved (2 cases)
		Alcohol injection, second and third nerves.	Pain relieved, 50 per cent (1 case)
		Avulsion of sensory root	Pain relieved (2 cases)
		Alcohol injection, second nerve	Pain not relieved; no anesthesia obtained (4 cases)
Postethmoid cells and maxillary antrum	1	(Avulsion of sensory root	Pain relieved, 60 per cent.
Cheek, skin	3	Avulsion of sensory root	Pain relieved (2 cases)
		Intracranial Neurectomy, second and third nerves	Pain relieved (1 case)
Cheek, mucous membrane	1	Alcohol injection, third nerve	Pain relieved, 60 per cent.
Tongue	5	Alcohol injection, third nerve	Pain relieved (4 cases)
		Alcohol injection, first and third nerves	Pain relieved (1 case)
Inferior maxilla	5	Alcohol injection, third nerve	Pain relieved (3 cases)
		Alcohol injection, second and third nerves	Pain relieved (1 case)
		Alcohol injection, third nerve	Pain relieved, 75 per cent (1 case)
Tongue and floor of mouth	10	Alcohol injection, third nerve	Pain not relieved (4 cases)
		Alcohol injection, third nerve	Pain relieved, 50 per cent. (1 case)
		Alcohol injection, third nerve	Pain relieved (1 case)
		Avulsion of sensory root	Pain relieved, 75 per cent. (1 case)
		Avulsion of sensory root	Pain not relieved (1 case)
		Avulsion of sensory root	Died (1 case)
		Alcohol injection, third nerve	Pain not relieved; no anesthesia obtained (1 case)

In dealing with pain referred to the trigeminal distribution, intracranial neurectomy is the procedure of choice. Direct exposure of the nerve roots makes it certain that they have been cut and that the maximum benefit will be obtained. Peripheral injection is more frequently employed, for patients dread the formal operation. Injection of the terminal divisions may be difficult in the presence of a malignant lesion, since the normal course of the nerve is often distorted by the pressure of the growth. The technic of injection will not be described. It has been discussed at length elsewhere.[2] In this series, twenty-four patients have been injected, with complete relief of pain in seventeen. In four, a decrease in pain resulted. Three were unaffected, although the typical anesthesia of a successful injection was produced. In ten cases, we were unable to reach the nerve, and no anesthesia or relief of pain followed (Table 2). In five of these, operation was subsequently done with complete freedom from pain in three and partial relief in one (Table 3). One patient was not relieved. Five patients were subjected to operation as a primary measure, three of whom were completely relieved. One, who died on leaving the operating room, had been given a local anesthetic and the ganglion exposed and injected with 2 c.c. of 10 per cent. cocain. Up to that time, his condition had been good, but within fifteen minutes of the cocain injection, he suddenly stopped breathing. We feel that the cocain may have traveled back from the ganglion along the sensory root and affected the respiratory centers. It was a fault in technic and should not be held against the operation. A second patient died ten days after operation, from meningitis. The malignant growth had involved the ethmoid cells and the base of the skull over them. This may have been the source of the infection. The operative exposure of the gasserian ganglion is simple. Particularly is this true if the external carotid has been ligated, often necessary if extensive fulguration of the face or tongue is to be attempted. External carotid ligation controls bleeding from the temporal and middle meningeal artery and makes access to the ganglion practically bloodless. Local anesthesia should be used, particularly if there is a sloughing surface within the mouth.

Table 2—*Results in Twenty-Five Cases*

Division of Nerve Injected	Successful	Improved	Unsuccessful	Total
Third	11	3	5	19
Second	3		4	7
Second and third	2	2	.	4

Table 3.—*Results in Ten Operative Cases*

4 living, pain free
2 dead, pain free till death; lived eight months
1 pain-free ten days; died of septic meningitis
1 dead; partially improved; lived two months
1 dead; operation
1 dead, lived three months; no relief of pain

If the malignant growth is situated superficially within the trigeminal area, the results from nerve block are very much more satisfactory than when the deeper areas of the face and mouth are involved. If the accessory sinuses, especially the ethmoid and sphenoid or the floor of the mouth, are the site of the lesion, the prognosis for complete relief should be very guarded. Of the thirty-five patients in this series, twenty-one were entirely freed from pain, six were much improved, and eight showed no change. In five of this last group, the lesion was situated in the floor of the mouth with involvement of the tonsillar pillar, and three had extensive degeneration in the maxillary bone and adjacent accessory sinuses. These three subjects refused further treatment after attempts at alcohol injection failed. Among the twenty-one patients completely relieved, nine died peacefully from metastasis within eighteen months following injection; seven are pain-free and receiving treatment. Five are apparently cured two years after treatment. In small painful lesions, with a fair chance of complete removal if vigorous treatment is instituted, nerve blocking by alcohol injection is especially valuable. Once the lesion is healed, the pain disappears. If subsequently the anesthesia from the injection wears off, it has done its work and the face regains its normal sensation. Of the two patients relieved by section of the first, second and third cervical nerves following laminectomy, Fay's patient died shortly in comfort. Three weeks after operation, our patient's suffering had ceased, and we feel that the last six months of her life will not be one long agony.

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[2] Grant, F C: Anatomic Study of Injection of Second and Third Divisions of Trigeminal Nerve, J. A M. A. 78:794 (March 18) 1922; Alcoholic Injection of Second and Third Divisions of Trigeminal Nerve, ibid 78:1780 (June 10) 1922.

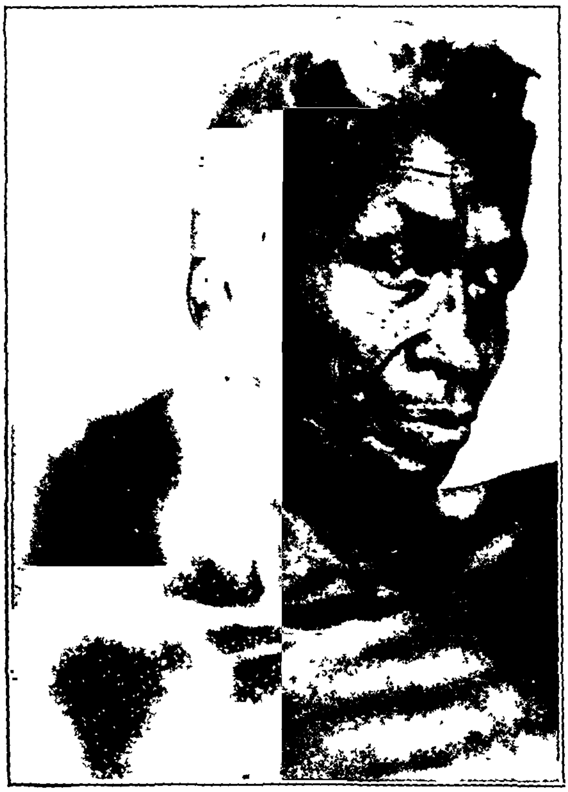

Fig 3.—Anesthesia following section of posterior nerve roots of first, second and third cervical segments Patient had a large carcinomatous mass involving the cervical lymph glands and deep structures, there was continuous pain referred to the cervical region. Complete relief followed section of the first three cervical segments of the posterior nerve roots.

Prior to our intervention, almost all of these patients had been receiving large doses of morphin. If, after nerve block, it is no longer necessary for the sufferer to use morphin or any of its derivatives to sleep, when subjectively he admits he has no more pain spontaneously or on manipulation of the lesion or during subsequent treatment directed toward its removal, we term that result a success. After relief, these sufferers are the most grateful class of patients that we meet. It is the constant gnawing pain, without remission or let up, day or night, that wears down their nerve and stamina and causes them to turn to opiates for relief. And many patients, even if the carcinoma is controlled, are still drug addicts. Relief of pain by successful injection prevents this misfortune.

Nerve blocking of the branches of the trigeminus for the relief of pain from cancerous lesions about the face is an act of mercy. It does not cure the lesion. Often that is impossible, but it makes the sufferers' last days comfortable. If a man or woman is doomed to die from cancer of the face—and it is a slow, lingering, miserable way to perish—it is cruel for us to deny them any treatment that may ease them on their way and relieve even a part of their anguish.

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ABSTRACT OF DISCUSSION

Dr. George E Pfahler, Philadelphia In the treatment of malignant diseases about the mouth and accessory sinuses, it is always necessary to use all the methods at our command to accomplish good results. Unfortunately, almost all these patients come at a very late stage, and in the late stages they suffer from severe pain. As Dr Grant has well said, this pain is constant and often it is extremely bad. It keeps the patient awake at night, and he soon loses strength and fighting qualities If one gives morphin, the general functions of the organism are upset and one loses ground in that respect, so that from every standpoint I look on this method as a tremendous advance, and the assistance given by Dr. Grant in patients that I have been called on to treat has been very great indeed. It is really a pleasure to see the results that are obtained from this method of securing anesthesia. In most of the cases, Dr. Grant has been able to obtain relief from pain by the alcoholic injection, but the last patient that he showed on the screen, for example, did not get relief from the alcoholic injection, and we then proceeded with more extensive operations, without regard to any general anesthesia or any other local anesthesia. Dr.

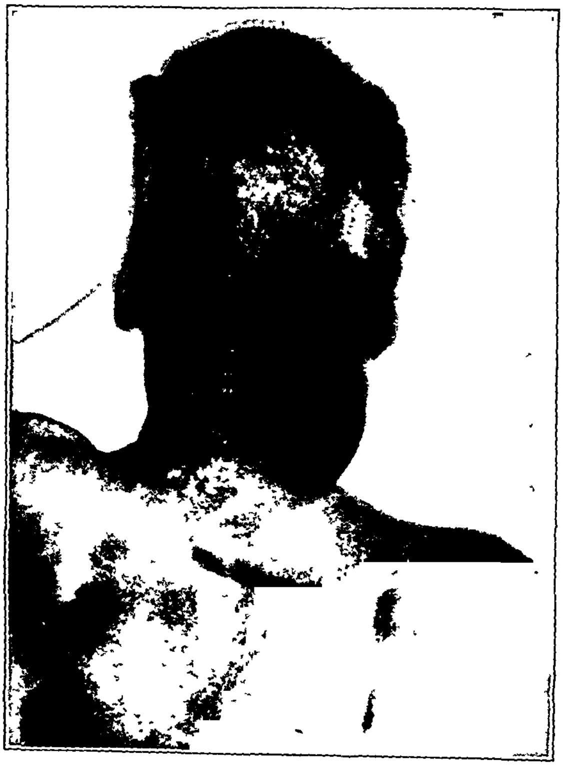

Fig. 4.—Same patient as in Figure 3: anesthesia in posterior cervical region.

Grant did not mention the fact that I have since operated on this patient for two local recurrences, under electrocoagulation, without any sensation on the part of the patient; these operations occurred three and four months after the primary operation for resection of the nerve within the cranial cavity. I wish Dr. Grant had showed the picture of the same man in an earlier stage. In the view shown, he was well nourished, had returned to business as a traveling salesman, and was attending to his work every day. Before the operation, he was emaciated and weak, and it looked as though we were going to fail. Of course, ultimately we may fail to get the malignant disease cured, but we certainly have given him tremendous relief. Stomatologists particularly should give the greatest attention to the early ulcerations that develop about the mouth. Any ulcer or sore about the mouth that does not heal up within two weeks must be considered in the light of a possible cancer.

Dr. Henry K. Pancoast, Philadelphia: Let me stress the point just brought out by Dr Pfahler. The radiologist probably sees more cases of advanced carcinoma of the mouth than any one else, and all these cases had a small beginning. A large percentage of them come for treatment when they are very far advanced. It is unfortunate that pain is a prominent symptom in the far advanced cases, but it is still more unfortunate that pain is not an early symptom, for probably many of them would be diagnosed earlier if that were the case. Stomatologists and dentists have more opportunities to detect cases of early carcinoma than any one else, certainly more than the general practitioner. In advanced carcinomas of the maxillary sinuses, the cheek, the lower jaw, the tongue and the floor of the mouth, and particularly in the metastases that occur later in the neck, intense pain is one of the late symptoms. This pain interferes with treatment and keeps the patient awake at night; he is unable to eat, and so starves. It is surprising how little food these poor sufferers get along with. Any procedure that can relieve the intense pain that saps the patient's vitality is certainly to be accepted. Morphin is unfortunately not a good drug to use if one can avoid it, because it does not work all the time, the patient has to take increasing doses, and it destroys his appetite. It is certainly most gratifying to see some of these patients completely relieved from pain. One of the first patients to receive an alcohol injection had a large carcinoma of the floor of the mouth. After the injection we were able to remove a large part of the growth by electrodesiccation without any other anesthetic. It was only when the midline was approached that he began to feel pain and we had to resort to infiltration of the tissues to complete the operation. In another case of carcinoma of the tongue, in a physician who had spent many sleepless nights and had taken morphin in increasing doses, Dr. Grant gave an alcohol injection into the fifth nerve, and after leaving the operating room, the patient came down to our department, lay down on the table and was asleep immediately. Such examples are most gratifying to see. It is not only for the sake of relief from pain that this procedure is advisable, but, having been relieved from pain, the patient can eat, and we can often tide him over the critical period. There is no doubt that some patients have recovered from fairly advanced carcinomas of the mouth because they have had relief from pain, and they could not have recovered otherwise. The great majority of patients advanced in the course of the disease have their surgical procedure performed for relief from pain simply as a humanitarian procedure.

Dr. T. L. Gilmer, Chicago: I should like to ask Dr. Grant whether he has noticed that there has been more pain in those cases in which radium has been used in postoperative treatment and also when radium has been used primarily without a surgical operation. My experience leads me to believe that there is more pain following the use of radium.

Dr. B. R. Kirkendall, Columbus, Ohio: I should like to ask Dr. Grant whether it is necessary to repeat these injections of alcohol to keep up the anesthesia.

Dr. F. A. Figi, Rochester, Minn.: Malignant lesions within the distribution of the ninth cranial nerve, particularly those of the base of the tongue and hypopharynx, as a rule, require radium treatment rather than surgical removal on account of their inaccessibility. This treatment is always followed by severe and at times excruciating pain lasting for several weeks and frequently for many months. Anything that will relieve this would certainly be a boon. Considering the very questionable prognosis in this group of cases, however, and the severity of the procedure of avulsion of the glossopharyngeal nerve, I should question the advisability of Dr. Grant's suggestion in this regard.

Dr. H. M. Selden, New York: I should like to ask Dr. Grant what objection he has to intra-oral injection of the third, fourth and fifth nerves.

Dr. F. C. Grant, Philadelphia: I believe there is more pain following irradiation than other methods of treatment of mouth cancer. One gets a very marked reaction after the use of radium, whether it is applied by the pack or by needles. For that reason, my thought is that either surgery or the electrocautery is better as a primary procedure. Of course, I speak from entire ignorance. I do not know anything about the roentgen ray or radium part of it, but I do feel that, following radium, these patients do have a severer reaction, and therefore probably suffer more pain. With regard to Dr. Kirkendall's question, if we are successful in introducing alcohol directly into the sheath of the nerve, we get anesthesia for from eighteen months to two years. Most of the patients that we see (almost all the cases are very far advanced) do not live that long. Of thirty-five cases, only five have gone beyond the two-year limit. All the rest are within the two-year limit or are dead. The avulsion of the glossopharyngeal nerve is unquestionably a severe major operation. It requires a suboccipital craniectomy. The posterior fossa of the skull is entered, the cerebellum retracted posteriorly and the glossopharyngeal nerve hooked out. I have opened the posterior fossa on many occasions, but I have never gone in after the glossopharyngeal nerve. It can be done under local anesthesia very readily. If a patient is suffering intense agony and is utterly miserable, the situation should be explained to him. If he dies as a result of the operation, he at least perishes quickly and comfortably. The probabilities are that he would not live more than six months. If the operation is successful, he will be pain-free for that time. It must be remembered that this procedure has nothing to do with retarding the growth of the cancer. All we attempt to do is relieve the pain. As far as the intra-oral injections are concerned, I have had no experience with them. We have had moderately good success with the external injection through the cheek. But if a small lesion is localized in the upper or lower jaw, where by striking the inferior dental or superior dental nerve one gets the necessary anesthesia, the intra-oral injection is entirely satisfactory. The majority of the cases that we see involve the entire branch, either the second or the third nerve, and for that reason it seems more efficient to strike those nerves at the points at which they leave the skull before they are broken up into their peripheral branches.

Infective Processes in Mental Disorder.—The point I wish to emphasize is that the granulations which cause the bony destruction are infected and constitute a focus of deep infection, drainage being closed by tough swollen mucoperiosteum and a tooth or stump. Hence the products of septic activity —toxins, possibly living bacteria and digested tissues, have no channel of escape from the focus. The tooth acts as a plunger, and injects this poisonous matter into the lymph space under the mucoperiosteum. The neighboring tissues are poisoned by the process, and the periodontal membrane of the next tooth becomes infected. The extraction of the teeth is only part of the treatment—the infected tissue is left behind and has to be dealt with. These chronic septic processes cause a chronic osteomyelitis spreading under the mucoperiosteum and forming deep hidden foci of infection which persists in the jaws after tooth extraction, and it is for this reason that every case should receive careful consideration before the application of dentures. In one case confusional attacks reappeared after the application of dentures, but ceased on their withdrawal. Dentures, unless carefully used, can do much harm by causing fresh infections.—Graves, T. C.: *J. Ment. Sc.* **71**:*662* (Oct.) 1925.

THE INTERCONVERTIBILITY OF "ROUGH" AND "SMOOTH" BACTERIAL TYPES

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The existence in certain bacterial stock cultures of two types of cells, characterized respectively by the formation on agar plates of "rough" (R) and "smooth" (S) colonies, has been demonstrated for a number of bacterial groups (Shiga bacillus, paratyphoid and typhoid bacilli, *Bacterium lepisepticum*, pneumococci, hemolytic streptococci, cholera vibrios and *Proteus*[1]). Under ordinary conditions, transfers from the S and R colonies breed true. The importance of the two types of colony formation is shown by the correlation of characters: subcultures from smooth colonies form stable suspensions in salt solution, while the cells from rough colonies tend to agglutinate spontaneously. The acid agglutination optimum is higher for the S than for the R type; the S type is more virulent than the R, and there are significant serologic differences.

In the examination of more than a hundred strains in my collection of paratyphoid bacilli,[2] there has been in all cases a correlation between the colony characters, the stability of suspensions in salt solution, and the optimum of acid agglutination. In all instances in which the virulence has been tested, the S strains have been found more virulent than the corresponding R strains.[3]

In well cared for laboratory collections, the S type is the more common, while in old cultures that have been allowed to dry up more or less, the R type often predominates. Several observers have been inclined to regard the S form as the "normal" type and the R form as a derivative perhaps due to degenerative change. De Kruif[4] considers the S → R transformation of *Bacterium lepisepticum* to be a mutation. There is no doubt that, under ordinary conditions of cultivation, the R type may develop from an apparently pure S type fairly readily. Most of the work on convertibility has been carried out with cultures transferred in the usual way from one tube or plate colony to another and is hence open to the objection that an environmental selection and not a transformation has occurred. De Kruif showed that a single-cell strain of the S type could give rise to the R type, but believed that the R type did not revert to the parent form. Most observers have found it difficult or impossible to convert the R into the S type. Schutze[1] considered it "apparently impossible to reconvert a rough into a smooth." Griffith,[1] however, states that R strains of pneumococci may revert in all respects to the S type or may remain unchanged after many generations in subculture in plain blood broth. Both of these observers were working with ordinary cultures and not single-cell strains. Savage and White,[5] who have recently reported a series of observations on organisms of the *Salmonella* group, are of the opinion "that rough variation is probably a permanent and irreversible change." Reimann,[6] who used single-cell cultures of Type I pneumococcus, was never able to isolate S organisms from the pure R strain and did not succeed in rendering a pure R strain type-specific and virulent for animals.

I have found it possible after single-cell isolation (Barber method) to originate at will not only the R type from a single-cell S paratyphoid strain, but also the S type from a single-cell R. Two representative cultures used for this purpose were *B. paratyphosus* B strains of the Schottmuller type[7] isolated from the blood in paratyphoid fever in man. The proportion of S to R colonies on plates made from the original stock cultures was about 10:1 in one strain, and 5:1 in the other. After single-cell isolation (from two to four cells each from pure R and S colonies), the single-cell strains were subjected to the usual biochemical tests for the members of the group and were proved to agree in all respects with the group and with one another. The R and S types differed sharply, however, in the biologic characters already described, and after repeated platings each remained true to its own type.

A representative experiment showing the conversion of S into R is given in Table 1.

Table 1.—*Results of Experiment Converting S Bacterial Types into R*

	Single Cell Isolation Strain 209	Single Cell Isolation Strain 210
After 2 days	S	S
After 7 days	S : R 10 : 1	S : R 5 : 1
After 10 days	S : R 10 : 1	S : R 5 : 1
After 16 days	S : R 1 : 1	S : R 1 : 1
After 28 days	S : R 1 : 5	S : R 1 : 2

The culture was kept without transfer at 37 C. in beef extract broth (p_H 7.0); and plates were made at intervals.

Starting with the R type, transfers were made twice daily in veal infusion broth (p_H 7.4) incubated at 37 C., as shown in Table 2.

Table 2—*Results of Experiment Converting R Bacterial Types into S*

	Number of Transfers	Strain		
		223	239	355
After 2 days	7	R	R	R
After 5 days	12	R	R	R
After 9 days	20	R	R	R
After 16 days	32	R (S ?)	R	R : S 2 : 1
After 25 days	50	R : S 10 : 1	R (S ?)	R : S 1 : 1
After 36 days	72	R : S 3 : 1	S ?	R : S 5 : 1

It thus appears from the tables that in some single-cell strains of the R type frequent transfers in veal infusion broth lead to the appearance of the S type; the proportion of S colonies developing on plates is irregular.

In virulence tests, mice and guinea-pigs were inoculated intraperitoneally (mice, 100 million, guinea-pigs,

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[1] Arkwright, J. A: J Path & Bact **24:** 36 (Jan) 1921 Schutze, H J. Hygiene **20:** 330 (Dec) 1921 De Kruif, P H J Exper. Med **33:** 773 (June) 1921 Griffith, F Reports on Public Health, No 18, Ministry of Health, London, 1923 Cowan, M L Brit J. Exper Path. **4:** 241 (Oct) 1923 Shousha, A T. J Hygiene **4:** 241, 1923

[2] Jordan, E O.: J. Infect Dis **20:** 457 (April) 1917; **36:** 309 (March) 1925

[3] Topley, W W. C., and Ayrton, J.. J. Hygiene **22:** 234 (Jan) 1924

[4] De Kruif, P H · J Exper. Med. **35:** 561 (April) 1922.

[5] Savage, W G, and White, P. B: Special Report 91, Medical Research Council, 1925.

[6] Reimann, H. A: J. Exper. Med. **41:** 587 (May) 1925.

[7] Jordan, E O: J. Infect. Dis **33:** 567 (Dec) 1923. The cultures are fully described under the numbers 209 and 210 in my earlier papers.

250 million) with the original single-cell strain carried on agar as usual (355 R), with the R type from rough colonies on plates from the thirty-second test tube generation in veal broth (355 R → 32 → R) and with the S type from the same plate as the latter (355 R → 32 → S). All the mice and guinea-pigs inoculated with 355 R and 355 R → 32 → R were not visibly affected and were alive after two weeks; those inoculated with 355 R → 32 → S all died, the mice within twenty-four hours, the guinea-pigs after five days.

COMMENT

Single-cell strains of paratyphoid bacilli of the R and S type can more or less regularly be made to yield cells of the opposite type by appropriate treatment. A nonvirulent strain can at will be converted into a virulent, and the virulent strain so produced possesses certain correlated characters, such as agglutinability and colony type formation, which distinguish it from the parent cell.

THE USE OF HIGH CARBOHYDRATE DIETS IN THE TREATMENT OF DIABETES MELLITUS *

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and
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SANTA BARBARA, CALIF.

During the past year, we have been using more liberal amounts of carbohydrate in our diabetic diets. Except for the omission of sugar and of foods actually sweetened with sugar, these diets are essentially normal, containing white bread, potatoes, milk and large servings of fruit. With some diets we have included even sucrose. Whereas our former diets contained, in addition to adequate protein, as high as from 2 to 2.5 gm. of fat to each gram of carbohydrate, these new diets contain 2 or more grams of carbohydrate to each gram of fat.

Ever since the discovery of insulin by Banting and Best,[1] we have hoped to be able to use better diets; but in the beginning, experiments were not practicable because of the early limited supply and the resulting high cost. Previous to the use of the present diets, we were not fully satisfied with the results from insulin, because many of the patients with a severer form of diabetes were not restored to the full measure of mental and physical activity. The weight of the patients could be easily restored, but many of them were still sluggish and had a soft, flabby appearance. Even such patients were usually satisfied, because they felt so much better than they did in the preinsulin days.

Our first experiment was instigated, however, to satisfy a discontented patient:

A man, aged 51, who, in the past, had been able to do big things in the business world, was admitted to the clinic from Denver, March 9, 1924, with the usual symptoms of a mild diabetes. His weight was normal at 140 pounds (63.5 kg.) net. There were no complications except for a very mild chronic interstitial nephritis, as evidenced by an occasional hyaline cast in the urine. The highly intelligent cooperation of both him and his wife enabled them to learn the diabetic routine rapidly. At the end of three weeks, he was discharged from the hospital on a diet containing 120 gm. of carbohydrate, 80 gm. of protein and 195 gm. of fat, totaling 2,555 calories. He was sugar free, had a normal blood sugar and did not take insulin, nor did we advise its use.

He returned to the clinic, October 20, to be carefully checked up, stating frankly that he had gained nothing by the six months of treatment, and that there must be something wrong either with him or with our diet. He had adhered faithfully to the weighed diet prescribed. He had remained constantly sugar-free, and his blood sugar had been normal whenever it had been taken. His weight had remained constant. We felt that he had managed his case as well as it could have been done. For theoretical reasons, we advised the use of a diet with a slightly higher proportion of carbohydrate to fat and small doses of insulin, although his diet then did not contain as much fat as was usually given. He refused, however, to be annoyed with insulin injections and returned home after a stay of seven days.

The patient returned to the clinic, November 16, with the intention of staying many months in a warmer climate at a lower altitude, in the hope that a long rest would bring about the desired improvement. In the meantime, although sugar-free, his blood sugar had risen slightly above normal, and on our advice he had reduced the carbohydrate and raised the fat so that his diet contained 80 gm. of carbohydrate, 88 gm. of protein and 207 gm. of fat, totaling 2,535 calories. This diet brought about no improvement in his blood sugar, and he felt even worse than he did before. On this admission, we again advised the slightly higher carbohydrate diet with small doses of insulin. This he willingly agreed to. We gave him a diet consisting of 119 gm. of carbohydrate, 78 gm. of protein and 200 gm. of fat, totaling 2,588 calories, with 30 units of insulin daily. He reported that on this diet he felt better, and with his approval we planned a radical experiment with a high carbohydrate diet. December 26, we gave him a diet containing 278 gm. of carbohydrate, 85 gm. of protein and 117 gm. of fat, totaling 2,505 calories. Within twenty-four hours, he noticed a change, and eight days later he felt so much better that he left the hospital and returned to work. We found that on this diet, 112 units of insulin[2] was required to keep him sugar-free and with a normal blood sugar. He has written us a letter each month, and again and again has asserted that the diet with insulin has fully restored him to his former prediabetic state of mental and physical activity. He has been able to reduce his insulin dosage gradually, and Aug. 16, 1925, still using the same diet, he was taking only 34 units a day.

The routine treatment of diabetes with the high carbohydrate diets does not differ in any way from the usually accepted methods, except that more insulin is required. We believe that a larger proportion of patients would be benefited if they began its use. All will agree that each patient should be freed from, and kept free from, the acetone type of acidosis; that he should be fully nourished; that he should be kept sugar-free, and that the blood sugar should be maintained at a normal level.

With our present diet plan, in addition to adequate protein, we are using 2 or more grams of carbohydrate to each gram of fat. As a routine we divide the total amount of food into equal amounts for each of the three meals of the day. Two doses of insulin are used, five eighths of the total dose being given from fifteen to thirty minutes before breakfast, and three eighths at the same interval before supper, with minor variations as necessary. When the insulin dosage is small, one dose may be given daily with two large meals following the insulin, and no insulin before the smallest meal.

We keep a patient sugar-free to our subnormal urine sugar test; that it, instead of using 8 drops of urine to

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* From the Potter Metabolic Clinic, the Research Department of the Santa Barbara Cottage Hospital.

* This work was supported in part by a special insulin grant from the Carnegie Corporation of New York.

[1] Banting, F. G., and Best, C. H.: The Internal Secretion of the Pancreas, J. Lab & Clin. Med. 7:251 (Feb.) 1922.

[2] The insulin (Insulin-Lilly, U-80) for this and many other similar experiments was furnished free to this clinic by Eli Lilly & Company of Indianapolis.

5 c.c. of Benedict's solution we use 16 drops of urine. When unusually small or unusually large amounts of urine are passed, we use proportionately fewer or more drops for the test.[3]

Table 1 represents the routine diet formulas in use at the present time. These are varied somewhat to suit the individual needs of each patient. If he gains weight too fast, he usually prefers to eliminate a part of the fat only, thus increasing the ratio of carbohydrate to fat.

Diet 1 is our acidosis diet and consists of 90 gm. of oatmeal (dry weight), 300 c.c. of skim milk and 1,000 c.c. of fruit juice. The oatmeal and skim milk are divided into three meals, and the fruit juice is given both with and between meals. In general, orange juice seems to be the most suitable, and often, especially if there is a tendency toward nausea and vomiting, lemon juice or grapefruit juice is mixed with the orange juice.

TABLE 1.—*Routine Diet Formulas*

No.	Diet	Carbohydrate	Protein	Fat	Calories
1	Acidosis	257	28	12	1,248
2	1,000 calories	95	48	49	1,013
3	1,500 calories	146	69	71	1,499
4	2,000 calories	202	79	97	1,997
5	2,200 calories	217	93	107	2,203
6	2,500 calories	245	100	124	2,496
7	3,000 calories	301	116	150	3,018

When the patient is free from acidosis, the remaining diets are used in the order listed, up to a maintenance level. Ample insulin is given, but no attempt is made to render the patient sugar-free on the acidosis diet. The patient is desugarized on Diet 2. He is kept comparatively quiet while on the low diet, lest he burn his body fat and thus precipitate an acidosis. If the case is not too severe, and especially if there is no acidosis, we often start with the diet at the supposed maintenance level, using either no insulin or a small dosage and gradually raising it to the required level. We thus eliminate the irksome days of partial starvation and inactivity.

Table 2 presents a typical diet as served. Potatoes are generally used as the 20 per cent. vegetable. Attention is especially directed to the large servings of fruit.

TABLE 2.—*Standard Diet of 2,200 Calories**

Type of Food	Breakfast	Dinner	Supper	Grams
3 per cent. vegetable	...	250	250	500
6 per cent. vegetable	...	...	100	100
20 per cent. vegetable	...	125	...	125
Eggs	2	...	...	2
Bacon	15	...	...	15
Lean meat (15 per cent. fat)	...	75	75	150
Butter	10	15	10	35
Bread	45	30	30	105
20 per cent. cream	33	33	33	100
10 per cent. fruit	250	250	300	800
Dry cereal	20	...	...	20
Whole milk	100	...	200	300

* Carbohydrate, 217; protein, 93; fat, 107; calories, 2,203.

For convenience in estimating the caloric value of foods, the lower percentage vegetables and fruits are placed in 3, 6, 9 and 10 per cent. groups. This system is simple, since the average rather than the precise value of foods is used, and yet seems to be sufficiently accurate for all clinical purposes.

We have now used these high carbohydrate diets with more than 150 patients, new and old. Table 3 gives some typical case summaries. These summaries were intentionally selected for comparative purposes from the series of our first hundred insulin cases, since these patients have been longest studied. Because of the severity of the disease, they have been either in, or in close proximity to, the clinic practically all of the time.

COMMENT

In an attempt to determine the exact relation of insulin to food, a large number of diet ratios were tried with Case 1. In the third, fourth and fifth diets, the "total quantity of glucose introduced into the body by a given food combination"[4] and the calories were kept constant. The fat was kept fairly constant, and the carbohydrate and protein were varied. The insulin requirements remained constant at 80 units a day.[5] At no time while these diets were being used did the patient pass sugar in the urine or become too sugar-free. It must be borne in mind, however, that patients may frequently be overdosed to the extent of 20 units a day before symptoms of hypoglycemia appear. We believe that, when the blood sugar is kept lower than normal, the pancreas, relieved of the stimulating effect of a normally high blood sugar, will rest to a certain extent. For this reason, we purposely overdose our patients by

TABLE 3.—*Summary of Ten Typical Diet Charts*

					Diet				
No.	Sex*	Age	Weight, Pounds	Date	Carbohydrate	Protein	Fat	Calories	Insulin Units
1	♂	53	92	5/31/22	24	34	68	844	0
			125	7/15/23	91	79	257	2,993	104
			151	3/25/24	91	79	193	2,417	80
			154	4/ 1/24	54	145	180	2,416	80
			153	4/ 9/24	113	40	200	2,412	80
			153	9/ 7/24	86	88	189	2,397	80
			148	1/10/25	143	87	141	2,189	166
			146	2/ 9/25	281	72	71	2,051	159
			145	3/23/25	412	75	11	2,047	183
			144	4/17/25	281	72	71	2,051	158
			140	5/ 4/25	281	72	71	2,051	136
			139	6/ 5/25	207	72	104	2,052	101
4	♀	24	91	7/24/22	29	43	75	963	0
			130	6/13/23	78	66	173	2,133	54
			143	3/30/25	196	81	84	1,864	100
			146	8/ 1/25	195	81	65	1,689	88
9	♀	53	84	8/17/22	20	57	92	1,136	0
			123	7/15/23	77	65	182	2,206	68
			137	3/ 9/25	179	82	85	1,809	73
			134	8/ 4/25	175	76	86	1,778	80
10	♂	30	103	11/ 9/22	97	56	213	2,529	76
			154	7/15/23	86	67	273	3,069	96
			167	7/15/25	245	100	124	2,496	106
15	♂	10	59	11/ 8/22	55	43	118	1,454	60
			81	7/15/23	80	55	179	2,151	69
			93	11/27/24	67	85	174	2,174	122
			102	8/ 6/25	200	80	84	1,876	110
35	♀	33	78	12/ 2/22	35	38	83	1,039	24
			123	6/11/23	81	81	221	2,637	78
			153	2/28/24	78	76	177	2,209	88
			148	8/ 6/25	259	81	70	1,990	86
43	♂	41	107	12/12/22	54	46	118	1,462	0
			124	6/ 9/23	78	66	223	2,583	36
			132	9/18/24	65	88	179	2,223	43
			136	8/ 6/25	231	83	96	2,120	68
46	♂	25	100	12/28/22	35	38	83	1,039	10
			120	6/ 8/23	68	92	180	2,240	79
			149	3/ 4/25	202	84	103	2,071	143
			150	7/28/25	202	84	103	2,071	126
54	♀	6	32	1/14/23	35	41	85	1,069	23
			34	6/ 9/23	35	38	78	994	4
			49	2/28/24	47	44	91	1,210	20
			49	3/ 5/25	148	67	75	1,535	40
			52	8/ 7/25	145	65	60	1,380	28
58	♂	12	108	1/23/23	35	38	83	1,039	34
			112	5/12/23	77	65	182	2,206	38
			114	9/10/24	78	89	202	2,486	72
			110	3/13/25	217	93	107	2,203	125
			127	6/ 1/25	217	93	107	2,203	84

* In this column, ♂ indicates male; ♀, female.

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[3] Sansum, W. D.; Blatherwick, N. R.; Smith, Florence, H.; Long, M. Louisa; Maxwell, L. C.; Hill, Elsie; McCarty, Ray; and Cryst, J. H.: The Treatment of Diabetes with Insulin, J. Metabol. Res. **3**: 641 (May-June) 1923.

[4] Woodyatt, R. T.: Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med. **28**: 125 (Aug.) 1921.

[5] Sansum, W. D.; Blatherwick, N. R.; Maxwell, L. C.; Hill, Elsie; Bell, Marion; Berger, John; and Sahyun, Melville: The Present Status of the Treatment of Diabetes with Insulin, California & West. Med. **22**: 321 (July) 1924.

at least 10 units a day. This slight overdosage probably accounts for the fact that patients remain constantly sugar-free to a subnormal degree, even when foods are used at their average values. In this series of diets, the insulin requirement seemed to be proportional to the glucose of the diet. With the eighth to the twelfth diets inclusive, the protein and calories were kept constant, but the carbohydrate and fat were varied. Here the insulin requirements increased as the carbohydrate was raised, but not in proportion to the glucose of the diet, as we formerly believed.

Any diet may be divided into its sugar formers and fat formers. The sugar formers of a diet are 100 per cent. of the carbohydrate, 58 per cent. of the protein and 10 per cent. of the fat. The fat formers of a diet are 46 per cent. of the protein and 90 per cent. of the fat, although in the finer sense carbohydrate may be considered as a fat former. Nearly all will agree that insulin is concerned in the burning of the sugar formers of the diet. There appears to be increasing evidence that insulin is also concerned directly in the burning of fat formers. Case 9 illustrates something that we have observed many times. The original diet contained 77 gm. of carbohydrate, 65 gm. of protein and 182 gm. of fat. The high carbohydrate diet contains 179 gm. of carbohydrate, 82 gm. of protein and 85 gm. of fat, or 97 gm. less of fat and 102 gm. more of carbohydrate, with 20 gm. more of protein. The insulin requirement was about the same, with 73 units on the new diet and 68 units on the old. In many instances, both with insulin and noninsulin patients, we have frequently substituted carbohydrate for fat without the appearance of sugar in the urine in the noninsulin cases or without raising the insulin dosage in the insulin cases. We have also been able to substitute more than an equal number of grams of carbohydrate for the fat omitted. Bloor,[6] working with partially depancreatized dogs, found a greater accumulation of fat in the blood plasma, and a slower removal of it than is normal, and states that his experiments indicate that these animals may not be able to utilize fat as well as the intact animals. Voegtlin[7] believes that insulin is not strictly related to carbohydrate metabolism but is also concerned with protein and fat metabolism. Allen[8] concludes that the insulin requirement of the organism is governed not only by carbohydrate but also by fat and all other elements entering into the diet metabolism. Joslin[9] has shown that obesity is a common early symptom of diabetes and occurs before sugar appears in the urine. This might be explained on the basis that the patient first loses the power to burn fat, and hence stores it.

Thus far, we have found no definite relation between insulin and the various types of food, but in the measuring of food tolerances and the adjustment of the insulin dosages to new diets, we have had excellent results by assuming that 1 unit of insulin will burn on the average of 2 grams of food. If a patient has no tolerance and is placed on a diet containing 200 gm. of carbohydrate, 100 gm. of protein and 100 gm. of fat, or 400 gm. of food, he will need 200 units of insulin daily. We have had a number of extremely severe diabetic patients to whom we have given doses nearly as high as this.

From the patients' standpoint, the most striking advantage gained by the use of these high carbohydrate diets has been the improvement in physical and mental activity. Such an improvement can be evidenced only by testimonials which are admittedly unreliable, but a few experiments with these diets will rapidly convince one of the truth of the observation. In the milder cases, such improvement was noted within a few weeks following the change in diet. In other patients who had been on the old diets for many years, the change occurred more gradually over a period as long as from three to four months. Two of our laboratory workers volunteered to eat a typical diabetic diet, balanced according to the Woodyatt formula, fat equals 2 carbohydrate plus ½ protein, and within a few days they began to complain of a diminution in their mental and physical powers. This was associated with acetone in the urine and considerable indigestion, doubtless due to the large amounts of fat. Following this experiment, it required some time to restore them to normal.

On these high carbohydrate diets, patients are entirely freed from the slightest traces of the acetone type of acidosis, whereas formerly, even when there was no acetone in the urine by the ordinary tests, its odor could be detected on the breath. Based on Shaffer's[10] earlier work, Woodyatt's belief was that a diet would cause no acidosis if the fat did not exceed two times the carbohydrate plus one half of the protein. Later, Shaffer[11] found that, although, in vitro, one molecule of glucose was effective for the oxidation of two molecules of fatty acid, under body conditions double that amount of glucose was necessary for complete avoidance of acetone body production. For many years, Joslin[12] has been advocating the use of more carbohydrate and less fat. His maintenance diets in an article in Oxford Medicine written in January, 1924, contain approximately 1 gram of carbohydrate to each gram of fat.

Gray[13] maintains that blood fat analyses are a material aid in the diagnosis and especially in the prognosis of diabetes mellitus. The higher the persistent blood fat, the more serious is the prognosis. It may be that the high fat diets of the past have been responsible for the high blood fats that he observed. We are now following the blood fat in severe cases to ascertain whether the new diets with ample insulin will bring about the desired decrease.

In the past, we have been unusually solicitous about keeping patients sugar-free and with a normal blood sugar, not only because of the deleterious effect of the sugar but also because this loss of sugar upsets the carbohydrate fat ratio. Infections, even when slight, reduce a patient's natural tolerance, causing a loss of the available sugar because it is passed in the urine. Even when the patient is sugar-free and while eating no food, serious infections have often precipitated coma, because of the imperfect consumption of body fat. Overexercise often causes a sufficient consumption of body fat to produce an acidosis, even when the diet is carefully balanced. These new diets, with at least two parts of carbohydrate to each part of fat, afford such a margin of safety that the acetone type of acidosis can hardly occur, even when large amounts of sugar are passed in the urine.

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[6] Bloor, W. R., and Gilette, Ethylnn M.: The Utilization of Fat in Diabetes, Proc. Soc. Exper. Biol. & Med. **22**: 251 (Jan.) 1925.

[7] Voegtlin, C.; Dunn, E. R., and Thompson, J. W.: Antagonistic Action of Certain Sugars, Amino Acids and Alcohols on Insulin Intoxication, Am. J. Physiol. **71**: 574 (Feb.) 1925.

[8] Allen, F. M.: Clinical Observations with Insulin, J. Metabol. Res. **3**: 61 (Jan.) 1923.

[9] Joslin, E. P.: The Prevention of Diabetes Mellitus, J. A. M. A. **76**: 79 (Jan. 8) 1921.

[10] Shaffer, P. A.: Further Observations on the Mechanism of the Ketolytic (Antiketogenic) Action of Glucose, J. Biol. Chem. **46**: vi (March) 1921.

[11] Shaffer, P. A.: Harvey Lectures, 1922.

[12] Joslin, E. P., in Oxford Medicine, New York, Oxford University Press **4**: 131, 1921.

[13] Gray, H.: Lipoids in 1,000 Diabetic Bloods with Special Regard to Prognosis, Am. J. M. Sc. **168**: 34 (July) 1924.

We are also studying the type of blood vessel disease associated with high blood pressure, because this disease is such a common complication of diabetes. Kylin[14] found that in diabetic patients under 40 years of age, the blood pressure was usually normal, but that above this age high blood pressure seemed to be the rule. Koopman[15] concludes from a study of 161 cases of diabetes that in young patients the blood pressure is normal, and in older ones hypertension is the rule.

Nuzum, Osborne and Sansum[16] have shown that high blood pressure may be produced in animals by the feeding of high protein diets containing too large a proportion of the acid-ash foods. The microscopic sections from the tissues in this series, an account of which will be published soon, show all the blood vessel lesions associated with high blood pressure, from a slight thickening of the intima to marked calcification of the vessels. Two years ago we did hydrogen ion concentrations as a routine on all diabetic urines, and we not only found such urines exceedingly acid (p_H 5.2), but also were unable to balance such diets to produce a neutral urine. At first we advocated the use of alkaline-ash soy bean products, but at present by the use of potatoes, large servings of fruit and more milk with less meat, we have no difficulty in balancing these diets to produce a neutral urine. We expect that this will lessen the incidence of blood vessel disease.

These diets are more palatable and lessen the craving for forbidden foods, especially for the carbohydrates. Diabetic patients often indulge in carbohydrate "sprees," and it may be that in so doing they are obeying a metabolic law. Much has been written about the consumption of too much sugar, but it seems to us that there is an equal or more serious tendency at present toward the overconsumption of fat, for rich (fat) foods are in greater and greater demand.

Our patients now seem to be satisfied with maintenance diets of lower caloric content. This may be due to the possibility that higher carbohydrate diets are more efficient and also to the fact that none of the food is lost in the form of the acetone bodies.

Warren and Root[17] have shown that the islands of Langerhans can and do regenerate. They believe that the destruction may be due to the acidosis, which in turn is due to abnormal fat or protein metabolites. These diets with their entire freedom from acidosis should give the pancreas its best chance for recovery. Even at this early date, it will be seen that some of the patients have been able to lower their insulin dosages. These lowered dosages are significant in these cases because over a long period of time before the use of the present diet plan, no change in their insulin requirements had been observed.

Such high carbohydrate diets necessitate more insulin, and many patients who are now not taking it should be advised to do so. This increases the cost of their diabetic medication, the average increase in insulin dosages in the cases cited above being about 40 per cent., with a constant tendency, however, toward a lower dosage. But this increased cost is partly offset by the decreased cost of the new diet plan, since no special foods are used, and much less of the expensive fats, such as cream, butter and olive oil. Then, too, the cost of insulin has been constantly on the decrease, and there is every reason to believe that further radical reductions in its cost will be made. These diets also enable the patient to increase his earning capacity.

SUMMARY

1. With the use of the high carbohydrate diets, we have found no difficulty in keeping patients sugar-free and with a normal blood sugar.
2. The patients are restored to a more nearly normal state of physical and mental activity.
3. They are freed from the slightest traces of the acetone type of acidosis.
4. The potatoes, milk and fruits have enabled us to eliminate the acid-ash type of acidosis which we believe has been a cause of the high incidence of blood vessel disease.
5. The diets are more palatable.
6. The patients lose their craving for forbidden foods, especially for the carbohydrates.
7. A somewhat lower caloric intake is apparently required for full maintenance.
8. These diets are cheaper, because they contain no special foods and much less of the expensive fats, such as cream, butter and olive oil.
9. Theoretically, at least, and because of the entire freedom from acidosis, such diets should afford the patients the best opportunity for partial recovery.

CHARACTERISTIC CHANGES IN BLOOD CHEMISTRY IN WHOOPING COUGH *

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Whooping cough still remains a source of a far from negligible mortality and of a great morbidity in childhood. A disease that causes 10,000 deaths in one year in the United States is certainly a serious menace. Yet this does not take into consideration the mortality indirectly attributable to it from predisposition to other infections, notably tuberculosis, nor does it take into account the morbidity resulting from it due to the persistent alterations induced so often in the bronchopulmonary tract; nor, indeed, can any calculation be made that would adequately express the detrimental effect on the nutritional status of the patient, a condition that probably persists often for a prolonged period of time.

In the study of pertussis there has not, it appears, been as much attention given to the chemical analysis of the composition of the blood as it would seem is merited by the importance of this aspect in the view of modern advances in medicine.

CHEMICAL ANALYSIS OF THE BLOOD IN PERTUSSIS

A total of 200 analyses were made by us, in some instances rather completely and in others for only one or two constituents. Certain changes were found with such a decided frequency as to be almost characteristic, and they apparently bear a direct relationship to the underlying pathologic basis of the disease. These changes were, particularly, (1) a change in the hydrogen ion concentration and (2) an alteration of the inorganic phosphorus content of the plasma.

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[14] Kylin, E.: High Blood Pressure and Diabetes, Zentralbl. f. inn. Med. **42**: 873 (Nov. 12) 1921.

[15] Koopman, J.: Blood Pressure and Sugar Metabolism, Endocrinology **8**: 340 (May) 1924.

[16] Nuzum, F. R.; Osborne, Margaret; and Sansum, W. D.: The Experimental Production of Hypertension, Arch. Int. Med. **35**: 492 (April) 1925.

[17] Warren, Shields; and Root, H. F.: The Pathology of Diabetes, with Special Reference to Pancreatic Regeneration, Am. J. Path. **1**: 415 (July) 1925.

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Hydrogen Ion Concentration.—The p_H of the blood expressing the true reaction was determined on the plasma in eighty-nine examinations by the electrometric method using the micro vessel, as described by De Eds and Hanzlik,[1] and checked up often by the colorimetric method as used by Hastings and Sendroy.[2] The blood was either coated immediately with liquid petrolatum or taken under liquid petrolatum and stored in the ice-box until the determinations were carried out (on the same day or the following morning).

The alterations detected were quite definite and at times accentuated. The determination ranged in untreated cases on an average from 7.15 to 7.25, with such exceptionally low figures occasionally as 6.98 and 7.01. It seemed to us that, in general, a decided relation existed between the stage and severity of the disease and the hydrogen ion concentration of the blood, the latter being lowest in the more severe cases and in the full paroxysmal stage.

Blood Chemistry Determinations in Pertussis Before Treatment *

		Blood in Pertussis			
	Normal Values	No. of Determination	Minimum	Maximum	Average Value
Hydrogen ion concentration	7.35				
Electrometric	....	10	6 95	7.41	7.29
Colorimetric	....	8	7.15	7.35	7.25
Phosphorus, inorganic	4.5-7 0 mg.	29	1.0	3.6	2.0 mg.
Calcium	10 5 11.5 mg.	17	8.5	13.9	10.7 mg.
Carbon dioxid	53-77	20	38	66	50
Urea	12-15 mg.	25	18.0	37.0	27.0 mg.
Uric acid	2-3 mg.	28	1.2	4.7	3.1 mg.
Creatinin	1-2 mg.	27	0.9	1.3	1.1 mg.
Sugar	50-120 mg.	23	50	76	65 mg.

* The normal values given are taken from Hawk's Physiological Chemistry, except for the figures for phosphorus, which are those given by Howland and Kramer for children under 5 years.

Phosphorus Content of the Plasma.—The normal value for the phosphorus content of the plasma in children up to 5 years of age varies from 4.5 to 7.1 mg. per hundred cubic centimeters of blood, according to the observations of Howland and Kramer.[3]

A total of 138 determinations were made in pertussis by the Briggs modification of the Bell-Doisy method.[4] In the majority of these analyses, the values were under 3 mg. per hundred cubic centimeters, and in quite a few there was less than 2 mg. per hundred cubic centimeters, the average being 2.0 mg. In one instance the very low figure of 1.0 was encountered. The significance of this finding as an indication of a change in phosphorus metabolism is evident.

Calcium Content of the Plasma.—The calcium content of the plasma was determined in forty-six specimens of blood by the method of Clark.[5] Slight variations from the normal figure of 10 to 11 mg. per hundred cubic centimeters were noted in some cases, but the majority of the analyses were entirely within normal range, the average in seventeen cases before treatment being 10.7 mg. per hundred cubic centimeters.

Carbon Dioxid Content of the Plasma.—The values that were obtained from fifty-seven examinations by the method of Van Slyke showed the majority of the results to fall within the lower half of the normal range. In some instances, however, a lower figure was encountered. In twenty determinations before treatment, the average value was 50 per cent. by volume.

Routine Analysis.—The values for urea, uric acid, creatinin and sugar will be found in the table.

SUMMARY

A total of 200 analyses of the blood have been made in whooping cough. Distinct and apparently significant changes have been encountered, the most characteristic of which were (1) a lowering of the hydrogen ion concentration of the blood and (2) a diminution of the inorganic phosphorus content.

CONCLUSION

There is a change in the hydrogen ion concentration of the blood in pertussis associated with a lowering of the inorganic phosphorus content of the plasma.

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[1] De Eds, F, and Hanzlik, P. J.: A Simple Micro Vessel with Electrode for Estimating the Hydrogen Ion Concentration of Blood, J. Biol. Chem. **60:** 355 (June) 1924

[2] Hastings, A. B., and Sendroy, J.: The Colorimetric Determination of Blood p_H at Body Temperature Without Buffer Standards, J. Biol. Chem. **61:** 695 (Oct) 1924.

[3] Howland, John; and Kramer, Benjamin: Calcium and Phosphorus in the Serum in Relation to Rickets, Am. J. Dis. Child. **22:** 106 (Aug.) 1921.

[4] Briggs, A. P.: A Modification of the Bell-Doisy Phosphate Method, J. Biol Chem. **53:** 136 (July) 1922.

[5] Clark, G. W.: The Micro Determination of Calcium in Whole Blood, Plasma and Serum by Direct Precipitation, J. Biol. Chem. **49:** 487 (Dec.) 1921.

RELIEF OF HAY-FEVER BY INTRADERMAL INJECTIONS OF POLLEN EXTRACT

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Intradermal medication is neither new nor recent. Tuberculin and vaccines have been so exhibited. Mention is occasionally found of the fact that hay-fever patients have been benefited by intradermal pollen tests. Vaughan [1] has advocated the daily subcutaneous injection of small doses of pollen extract in the treatment of hay-fever during the attack. But I cannot find in the literature here available a report of the systematic use of intradermal injections of pollen extract, at one or two day intervals, for the relief of the symptoms of hay-fever.

My purpose here is to report the results in a small series of cases intradermally treated, and the technic employed. These results are so much better than those obtained in previous years on a larger number of patients of the same sort, living in the same community and treated in the usual way with entirely similar pollen extracts, that it seems proper to offer the method for wider trial.

Acquaintance with the therapeutic properties of the skin test was forced on me in 1921, when I could neither buy an extract of Bermuda grass pollen nor collect enough of such pollen to make one. In April of that year, my first local hay-fever patient, as later reported,[2] "reacted strongly to the whole pollen of Bermuda grass and was relieved noticeably by the skin test. This continued to be his treatment until a good Bermuda extract was finally obtained in May. One to 12,000 was given in ascending doses until June 30, though he was symptom-free." This therapy was accomplished with raw pollen used in superficial skin incisions, which were progressively increased in length. Shortly thereafter, an intradermal test with the newly made extract (not standardized) was done on a patient suffering from hay-fever. The resultant local reaction reached from the wrist to the deltoid insertion, and it lasted forty-eight hours; when it subsided, the patient's symptoms had disappeared, not to return that year. Treatment was continued at weekly intervals, but not intradermally.

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[1] Vaughan, W. T.: Specific Treatment of Hay-Fever During the Attack, J. A. M. A. **80:** 245 (Jan. 27) 1923.

[2] Phillips, E. W.: The Treatment of Hay-Fever with Arizona Pollens, Southwest. Med. **6:** 136-144 (April) 1922.

In 1922, among eighty-nine patients who were treated for hay-fever, there were two of the type especially liable to pollen shock: overnourished women with thin skins, very firm flesh, and a high degree of sensitization. It is practically impossible in giving subcutaneous treatment to a person of this type to be sure that part of the injection does not find its way into a small vein, for the superficial vessels are so firmly held that they cannot slip away from the needle. Both of these women suffered really severe pollen shocks. To avoid a repetition of this accident, it was decided to treat both by giving the dose into the substance of the skin. One patient was treated preseasonally, the other coseasonally. Both obtained practically complete relief that year and during the three succeeding years, and neither has had pollen shock since the intradermal technic was adopted.

The method thereafter was employed occasionally, especially if shock was feared. It is awkward to use in preseasonal treatment, because of the quantity of fluid injected. The larger doses leave indurated nodules which persist for a week or two. With the smaller dosage employed in treatment during the attack, this disadvantage is not present. In 1924, I began to use the intradermal method systematically on about half of the patients treated coseasonally, giving the treatments two or three times a week; in 1925, I used it on all such who were being treated with a single pollen. The later patients of this season were injected daily.

The material here reviewed comprises twenty-nine patients, of whom twenty-four were having symptoms from Bermuda grass pollen, three from ash, one from bur ragweed and one from careless weed. The pollen extracts were made from local pollens by a modification of Clock's method, and Coca's fluid was used as a diluent. They were the same that had been used in the subcutaneous treatment, and except for the advantage inherent in the use of local pollen, they were not different from other good extracts similarly prepared. It may be remarked at this point that the effective strength of an extract is best measured clinically. It depends on the quality and the purity of the pollen used and on the method of its extraction. The term "pollen unit" conveys no information unless the antecedents of the preparation are completely known. The relative potency of the extracts now under consideration may be judged by the fact that an ordinary preseasonal (preventive) course begins with 0.05 c.c. of the 1:5,000 dilution and ends with 1 c.c. of the 1:500 dilution. This is enough to protect the average patient, and many never tolerate so much and still are protected.

TECHNIC

The technic of intradermal treatment during the attack was as follows:

The sensitization was determined by the "scratch test," but a tiny incision was used, not a scratch. Then, by the same method, the patient was tested with the 1:500, the 1:5,000, and (if the latter was strongly positive) with the 1:10,000 dilution of the indicated pollen. Usually the 1:5,000 gave a weak positive reaction, and the initial dose of 0.05 c.c. of the 1:5,000 dilution was given into the substance of the skin, the same as an intradermal test. The patient was instructed to note carefully the size of the resulting local reaction, comparing it to the palm of his hand. In the earlier cases, only three doses a week were given; in the later ones, treatment was given daily except Sunday. The patients were instructed to return on the next day (or the next treatment day), if the reaction had begun to recede by that time.

The increase in dosage was adjusted to the tolerance of the individual patient, the attempt being to produce a local reaction about the size of the patient's palm, which reaction should begin to subside within twenty-four hours. With some patients the dose could be doubled at each treatment; others tolerated only a 50 per cent. increase, and occasionally a dose had to be repeated without increment. Care was taken to select a fresh site for each injection, in order to avoid desensitized areas and to insure a brisk local response to each dose.

When relief was obtained, the dose interval was doubled, and the progressive increase of dosage was continued. Then, after three or four doses, the patient was directed to return at the first sign of hay-fever, and at ten-day intervals even if no symptoms had recurred. Some disregarded this last direction with no ill effect.

Intradermal injections are painful if more than 0.25 c.c. is introduced into one wheal. Accordingly, it was found necessary to add dilutions of 1:2,500 and 1:250 to the armamentarium.

RESULTS

Treatment of these twenty-nine patients by the intradermal method was monotonously successful. Complete relief, or so near an approximation to it that the patients were comfortable and satisfied, occurred in every case. And it occurred early; six patients were made comfortable by the first dose. Those who were treated daily (ten patients) reported themselves as relieved, on the average, at the end of about two and one-half days, with an average of the same number of doses. The longest refractory period was seven days with six doses. Those who came three times a week (nineteen patients) were made comfortable, on the average, in six days after two and sixteen-nineteenths doses. The most refractory took twelve days with five doses. As stated above, treatment was continued at increasing intervals and with ascending dosage for some time after relief was obtained.

Four other patients began treatment by the same method and abandoned it. One had had four doses, the others one or two each. None have since been heard from. Indirectly, it has been learned that one obtained relief. Assuming that the others were failures, even then the result of treatment during the attack by the intradermal method is much better than I have been able to effect by the usual method, other conditions being the same.

Dr. W. W. Duke of Kansas City very kindly consented to try the intradermal method in his practice. As stated in personal communications, he has modified the technic slightly and apparently to advantage; for his results are even better than the ones here recorded.

COMMENT AND CONCLUSIONS

So far, at any rate, as these few cases are concerned, it appears that a treatment consisting essentially of frequent intradermal tests of increasing strength promptly and effectively relieved the symptoms of hay-fever.

It was observed that relief was proportionate, not to the quantity of pollen extract administered, but rather to the extent and vigor of the local reaction. This may offer a hint concerning the mechanism of the biochemical process involved, but speculations of this sort are not in order here.

Daily injections are safe, always provided that the reaction from the preceding dose has begun to subside and that the ratio of increase is well judged. Relief was had much more quickly with a daily dosage, though the number of doses before relief was practically the same whether treatment was administered *daily or thrice a week.*

The intradermal method is recommended for trial by those who are experienced in hay-fever work. While it is simple, a certain nicety of technic, a practiced judgment of reactions, and, above all, a thorough familiarity with the particular reagent which one is using, are essential if good results are to be obtained. The physician who deals with allergic disease only occasionally will be wise in adhering to the accepted mode of treatment.

St. Luke's Home.

THE USE OF TRYPARSAMIDE IN PATIENTS WITH AND WITHOUT OCULAR LESIONS *

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Since the introduction of tryparsamide as a therapeutic agent in human trypanosomiasis by Pearce,[1] numerous articles have been published on its advantages and untoward effects in treating neurosyphilis. Practically every writer has mentioned certain adverse manifestations on the visual apparatus, varying from mild subjective symptoms to blindness.

The experimental study by Young and Loevenhart[2] on the toxicity of various arsenical drugs with reference to the visual apparatus explains the cause for bad results in the use of tryparsamide as well as atoxyl from which it is derived. They showed that arsenicals with an amino group, or a substituted amino group, in a para position to the arsenic produce optic nerve lesions in the rabbit. Organic arsenicals with the amino group, or substituted amino group, in the ortho or meta position to the arsenic produce no optic nerve lesions. Obviously, the valence of the arsenic in this group is not important in the production of optic nerve lesions. The valence of the arsenic in certain instances, however, can modify the intensity of the action of a given substance on the optic tract. The most important factor in the production of optic nerve lesions is the presence of the amino group in the compound in the para position to the arsenic regardless of its valence.

Lorenz, Loevenhart, Bleckwenn and Hodges[3] made the first clinical report of the use of tryparsamide in the treatment of neurosyphilis. Only two articles concerned primarily with the optic tract have appeared since. Lorenz and his associates began with 5 gm. dosage at weekly intervals, but 40 per cent. of their patients complained of visual disturbances, and the dosage was reduced to 3 gm. Two of their patients had optic nerve lesions before treatment, and their disability was increased and remained permanent. Only 7 per cent. of the total number of patients treated,[4] however, showed visual disturbances, and these usually in the first course of treatment. Treatment could usually be resumed after a few weeks of rest without any further difficulty.

The first article based on a careful study of the visual manifestations in 241 patients was published by Woods and Moore.[5] In 10.2 per cent. of the patients, there were subjective disturbances and in 5.5 per cent. objective ocular damage. Five patients, or 2.1 per cent., had disturbances, but the influence of tryparsamide was questionable. The untoward effects usually appeared by the fifth injection. Those having subjective symptoms could usually be treated even more vigorously after the symptoms had subsided. Size of dosage apparently had little to do with the incidence of disturbances, unless possibly the smaller dosages were more prone to produce untoward effects. The optical disturbances were more frequent in paretic and tabetic patients than in other types of neurosyphilis. They also occur in untreated patients, but not to such a great extent. While Woods and Moore do not think that preexisting syphilitic disease of the optic nerve or retina is necessarily a contraindication to the use of tryparsamide, they do believe that, once objective evidence is present and attributable to tryparsamide, the drug should be permanently withheld. That tryparsamide will cause visual disturbances in conditions other than neurosyphilis was demonstrated in two cases of postencephalitic parkinsonian syndrome and in a nonsyphilitic boy with lymphosarcoma. This was also demonstrated in Pearce's[1] cases of trypanosomiasis. However, if objective signs occur, withdrawal of tryparsamide will usually stop the process well short of severe permanent injury.

The other article, by Lillie,[6] points out that the effect of syphilis on the optic tract is usually ignored in evaluating the untoward effects of tryparsamide. The literature on the subject indicates that from 11 to 41 per cent. of untreated neurosyphilitic patients have visual disturbances. In his own series, 50 per cent. had disturbances in the vision, pupils, reflexes, fundi and perimetric fields. In patients treated with arsenicals other than tryparsamide, 12 per cent. had visual disturbances, 9 per cent. fundus changes, and 20 per cent. perimetric changes. Of those treated with tryparsamide, 7.8 per cent. had subjective symptoms, and 3.5 per cent. had objective signs. None of these developed central scotomas, in contrast to 2 per cent. occurring in arsphenamin treated patients and 6 per cent. in untreated patients. In other words, treatment with the arsphenamin group of drugs caused some abatement in the progress of the disease, but tryparsamide is even more effectual than the arsphenamin group.

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* From the Departments of Internal Medicine and Neurology and the Department of Ophthalmology, Washington University School of Medicine.

[1] Pearce, L.: Studies on the Treatment of Human Trypanosomiasis *with Tryparsamide,* J. Exper. Med. (supplement) **34:** 1 (Dec.) 1921.

[2] Young, A. G., and Loevenhart, A. S.: The Relation of the Chemical Constitution of Certain Arsenical Compounds to Their Action on the Optic Tract, J. Pharmacol. & Exper. Therap. **23:** 107 (March) 1924.

[3] Lorenz, W. F.; Loevenhart, A. S.; Bleckwenn, W. J., and Hodges, F. J.: Therapeutic Use of Tryparsamide in Neurosyphilis, J. A. M. A. **80:** 1497 (May 26) 1923.

[4] Lorenz, W. F.; Loevenhart, A. S.; Reitz, R. F., and Eck, C. P.: The Use of Tryparsamide in Neurosyphilis, Am. J. M. Sc. **168:** 157 (Aug.) 1924.

[5] Woods, A. C., and Moore, J. E.: *Visual Disturbances Produced by* Tryparsamide, J. A. M. A. **82:** 2105 (June 28) 1924.

[6] Lillie, W. I.: Tryparsamide Treatment of Syphilis of the Nervous System, J. A. M. A. **83:** 809 (Sept. 13) 1924.

Other reports of a general nature on the use of tryparsamide constantly contain references to ocular disturbances. Ebaugh and Dickson[7] had bad optical results in about 2 per cent. of their patients, but on the whole were favorably impressed by the clinical use of tryparsamide. Bleumel and Greig[8] consider tryparsamide as "therapeutic dynamite" and are not pleased with its general clinical results. This may possibly be due to the long courses of treatment employed. It should be noted that they gave weekly doses of tryparsamide for sixteen weeks. In view of our early experience we believe this is too intensive, not only for the optic tract, but also for the nervous system in general. In Crawford's[9] small series of paretic patients, 13.3 per cent. showed signs of developing optic atrophy. None of these patients complained of visual disturbances. Parsons'[10] small series of patients treated with sulpharsphenamin had a somewhat higher incidence of visual disturbances than the tryparsamide series. Twenty-five per cent. (three patients) of the tryparsamide group had visual field constrictions without subjective symptoms. Wile and Wieder[11] did not observe any serious permanent injury to the vision in their cases. Ten per cent. of Smith's[12] patients had visual disturbances; in 5 per cent., the result was about half normal vision and 5 per cent. became completely blind, in a series of forty patients.

One thing is notable about these reports. The larger the series, the less likelihood of a high incidence of bad ocular results. The higher rate of incidence usually occurred earlier in the series than later. In the smaller series, all the patients seem to have had moderately high if not high incidences of ocular mishaps. There seems to be little else to which to ascribe these rather alarmingly high figures than to the necessary inexperience of persons using a new drug. As with Lorenz, Loevenhart, Bleckwenn and Hodges,[3] the early part of our own series[13] had a higher incidence of untoward results than the later portion of the series.

This study was undertaken to test out the following considerations:

1. Will tryparsamide cause so large a percentage of optic complications as to warrant its discontinuance?
    (a) In patients already suffering from optic neuritis or optic atrophy.
    (b) In patients with normal optic tracts.
2. Is tryparsamide more liable to affect adversely those patients having the optic tract already attacked by syphilis?
3. What are the most important signs and symptoms of adverse action on the optic tract?

For the purpose of arriving at an answer to the foregoing questions, a detailed study was made of all neurosyphilis patients treated with tryparsamide in the neurologic services of the Barnes Hospital and the Washington University outpatient department up to June, 1925. Two tables are presented, showing a summary of such cases. The first contains those cases called normal; i. e., patients having no recognizable signs of optic neuritis or atrophy, loss of visual acuity, or contraction of visual fields. The second table concerns the patients classified as abnormal because of the presence of one or more of the foregoing signs of optic involvement. The total number of patients studied was 180. Of these, 153 were considered normal in the foregoing sense and twenty-seven abnormal.

TABLE 1.—*Manifestations in Normal Patients*

	Patients	
	Number	Per Cent.
Eye complications in normal patients	8	5.2
Blurred vision sufficient to omit treatment temporarily	4	2.6
Moderate visual field constriction	3	1.9
Marked visual field constriction	5	3.2
Improved when treatment was withdrawn	3	1.9
Unimproved when treatment was withdrawn	2	1.3

Of the 153 normal patients only eight, or 5.2 per cent., had sufficient manifestations to warrant their being tabulated here. Among this eight, three had only a slight contraction of the visual fields which disappeared after temporary withdrawal of the treatment, and five had marked constriction, of which two failed to improve. Thus, we see 1.3 per cent. of the normal patients apparently injured by the use of tryparsamide.

TABLE 2.—*Manifestations in Abnormal Patients*

		Worse		Unimproved		Unchanged	
	No	No	Per Cent.	No.	Per Cent	No	Per Cent.
Abnormal patients treated	27	10	37.0	4	14.8	13	48.1
Optic atrophy*	16	4	27.4	2	12.5	8	50.0
Slightly or moderately constricted fields	10	4	40.0	2	20.0	4	40.0
No atrophy; chorioretinitis	1	0	0	0	0	1	100.0

* Three patients became blind; one improved; one's progress hastened by treatment; the other neither hastened nor retarded.

Of the twenty-seven abnormal patients ten, or 37 per cent., became definitely worse; six of the ten patients had recognizable atrophy at the start, while four had slightly or moderately constricted fields. Four of the twenty-seven were notably improved (14.8 per cent.), and thirteen (48.2 per cent.) remained the same. Three of the six optic atrophy patients who became worse progressed to blindness. One of these recovered a portion of his vision; one seemed to lose sight more quickly from the use of the drug, and the other continued on his downward course, seemingly neither hastened nor retarded by tryparsamide.

The patients that suffered permanent injury were treated during the first six months of our use of tryparsamide. After sufficient experience in noting symptoms and in regulation of the dosage to be used in any particular patient, no such ill effects resulted. Treatment was given in a routine manner during this time[13] and consisted of tryparsamide in approximately 50 mg. per kilogram of body weight doses once weekly and mercuric salicylate in 0.06 gm. doses, three or four days after the tryparsamide injections, for a period of eight weeks when a rest period of from four to six weeks was allowed. If visual disturbances were recognized, treatment with tryparsamide was suspended as long as seemed necessary and then resumed with the same or smaller doses. Later arsphenamin, neo-arsphenamin and sulpharsphenamin, other mercurials and bismuth were used, and either the dosage of tryparsamide was reduced or the intervals between injections was lengthened, all to suit the tolerance of the patient generally or to suit his especial needs. Tryparsamide was used as an adjuvant to known spirocheticidal agents and in rather strict adherence to the findings of Brown and Pearce,[14] who say that it is not essentially spirocheticidal, but that it exerts a favorable stimulative effect on the animal organism of the patient with neurosyphilis. Due cognizance was taken of a possible cumulative effect of repeated doses.[15] Traces of arsenic may be found in the urine as long as three weeks after a single injection of tryparsamide.

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[7] Ebaugh, F. G., and Dickson, R. W.: Use of Tryparsamide in the Treatment of General Paresis, J. A. M. A. **83**: 803 (Sept. 13) 1925.

[8] Bleumel, C. S., and Greig, W. M.: The Results Obtained with Tryparsamide in a Group of Fifty Cases of Neurosyphilis, Colorado Med. **22**: 16 (Jan.) 1925.

[9] Crawford, C. M.: Tryparsamide Therapy in Neurosyphilis, Canad. M. J. **15**: 47 (Jan.) 1925.

[10] Parsons, R. P.: Tryparsamide and Sulpharsphenamin in the Treatment of Neurosyphilis, U. S. Nav. M. Bull. **22**: 526 (May) 1925.

[11] Wile, U. J., and Wieder, L. M.: Tryparsamide in the Treatment of Neurosyphilis, J. A. M. A. **84**: 1710 (June 6) 1925.

[12] Smith, E. R.: Tryparsamide in Neurosyphilis, J. Indiana M. A. **18**: 125 (April) 1925.

[13] Schwab, S. I., and Cady, L. D.: Tryparsamide in Syphilis of the Nervous System, Arch. Neurol. & Psychiat. **13**: 80 (Jan.) 1925.

Including the early patients that suffered injury, the percentage of normal patients that had permanent visual impairment is so low that it falls far short of being a serious contraindication to tryparsamide as another weapon against syphilis. This is especially true when it is noted that none of the normal group in which treatment was begun in the latter part of the series suffered noteworthy damage.

The consideration of those already showing ocular involvement who were objectively damaged is a serious one. Thirty-seven per cent. of this series became worse. At first glance, such a high figure would indicate that the therapeutic agent itself had caused the injury. Moreover, a consideration of the number showing any marked improvement as a result of the treatment does not add much in favor of the drug. When only 14 per cent. show improvement as against 37 per cent. worse, and 48 per cent. no better, appearances are adverse on the basis of this evidence. One finds justification, however, for it as an agent in the treatment of syphilitic ocular lesions when one considers the generally unfavorable results of such cases in which treatment by other means was given. The fact that 62 per cent. of these lesions, with so dismal a prognosis, are either arrested or improved when the treatment is properly controlled lends a more favorable aspect to its use.

CONCLUSIONS

1. Tryparsamide can be used by experienced persons with comparative safety on patients having normal optic tracts. Reasonable safety in the use of the drug for all patients requires an experience analogous to that required in special surgical procedures.
2. Patients with optic involvement, such as contracted fields or abnormal fundi, are more liable to injury by the treatment than normal patients, but show favorable response to treatment if it is properly controlled.
3. The most important signs of adverse action of the drug on the optic tract are subjective dimness of vision, flickering or shimmering sensations, or flashes of light; also objective diminution in the visual acuity, contraction of the visual fields and changes in the fundi.
4. The occurrence of subjective symptoms should be thoroughly investigated for an objective basis. If no objective signs are found, tryparsamide may be continued with caution. The presence of objective findings is a contraindication for further tryparsamide for at least one month, when it may usually be resumed.

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[14] Brown, W. H., and Pearce, Louise: Tryparsamide: Its Actions and Uses, J. A. M. A. **82**: 5 (Jan. 5) 1924.

[15] Young, A. G., and Muehlberger, C. W.: The Excretion of Tryparsamide, J. Pharmacol. & Exper. Therap. **23**: 461 (July) 1924.

CHANGES IN THE BLOOD RESULTING FROM DUODENAL FISTULA

A CLINICAL AND EXPERIMENTAL STUDY *

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Attention has recently been directed to duodenal fistulas by Colp,[1] Cameron[2] and Rigby,[3] who have compiled and carefully summarized data on reported cases. However, no definite explanation of the cause of death in such cases has been given. Believing that the chemical changes in the blood accompanying clinical and experimental duodenal fistula might afford information of value, we made a study of these at the Mayo Clinic. Two patients with acute postoperative duodenal fistula, one following gastric resection for carcinoma with a posterior Polya type of anastomosis, the other resulting from the removal of an abdominal sponge, were studied, as well as some sixty dogs in which fistulas had been produced experimentally. The chemical changes in the blood associated with both clinical and experimental acute duodenal fistula are similar to those reported by Haden and Orr,[4] Brown, Eusterman, Hartman and Rowntree,[5] and McVicar[6] in cases of high intestinal stasis. The changes consist of increasing alkalosis, decreasing concentration of chlorids in the blood serum, and progressive rise of blood urea, as shown in the accompanying table and chart. The response to intravenous injections of chlorids, glucose and water is similar to that in cases of high intestinal stasis.[7]

The life of animals with experimentally produced duodenal fistula can be maintained by introducing into the blood stream enough sodium chlorid to restore the blood chlorids to normal, provided a sufficient amount of fluid is also injected. Both sodium chlorid and a sufficient volume of water are necessary, for one without the other seems to have little effect in lengthening the life of the animal. Intravenous injection, twice daily, of from 500 to 700 c.c. of a 1 per cent. solution of sodium chlorid will maintain life in dogs with duodenal fistula for more than three weeks, at the end of which time the animals are in fair condition, whereas without such injection death occurs within three or four days. In either event, an increasing alkalosis, and a progressive decrease in blood chlorids seem to develop, and in the terminal stage there is an accumulation of urea in the blood and a progressive decrease in the volume of urine and its constituents, urea and chlorid. Only a summary of the results of our investigations will be given here.

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* From the Division of Surgery, Mayo Clinic, and the Division of Experimental Surgery and Pathology, the Mayo Foundation.

[1] Colp, Ralph: External Duodenal Fistulae, Ann. Surg. **78**: 725-744 (Dec.) 1923.

[2] Cameron, A. L.: Treatment of Duodenal Fistula, Surg., Gynec. & Obst. **37**: 599-606 (Nov.) 1923.

[3] Rigby, H. M.: A Note on External Duodenal Fistula with a Record of Some Unpublished Cases, Brit. J. Surg. **12**: 43-51 (July) 1924.

[4] Haden, R. L., and Orr, T. G.: The Cause of Certain Acute Symptoms Following Gastro-Enterostomy, Bull. Johns Hopkins Hosp. **34**: 26-30 (Jan.) 1923.

[5] Brown, G. E.; Eusterman, G. B.; Hartman, H. R., and Rowntree, L. G.: Toxic Nephritis in Pyloric and Duodenal Obstruction: Renal Insufficiency Complicating Gastric Tetany, Arch. Int. Med. **32**: 425-455 (Sept.) 1923.

[6] McVicar, C. S.: A Discussion of the Clinical and Laboratory Findings in Certain Cases of Obstruction in the Upper Gastro-Intestinal Tract: The Rôle of Blood Chemistry in Diagnosis, Prognosis and Treatment of This Condition, Am. J. M. Sc. **169**: 224-235 (Feb.) 1925; The Treatment of Toxemia Associated with Gastric Stasis, Obstructive and Nonobstructive, Minnesota Med. **8**: 429-433 (July) 1925.

[7] Haden and Orr (Footnote 4). McVicar (Footnote 6).

CAUSES OF DEATH IN CASES OF DUODENAL FISTULA

Explanations of the cause of death in cases of duodenal fistula have all been of a speculative nature. From the clinical standpoint, Kanavel's[8] description of a patient who died from retroperitoneal rupture of the duodenum is interesting. He says: "The appearance of the patient was almost suggestive of delirium tremens or more of an active toxemia. There were no positive signs of peritonitis, no vomiting, and the bowels moved freely. The patient presented the appearance of death from toxemia of other than bacterial origin." Kanavel also discusses the possible relation between death and the loss of bile and pancreatic fluid in cases of duodenal fistula and the bearing of toxic absorption from the decomposing mucous membrane of the stomach and duodenum, similar to that reported by Wilms[9] with high intestinal obstruction. The effect of the loss of pancreatic ferments and bile, as well as the absorption of various abnormal secretory products leaving the duodenum, is mentioned by Colp. It is noteworthy that in many of the reported cases of duodenal fistula the total amount of secretion discharged through the fistulous tract varied from 1 to 5 liters in twenty-four hours, and yet Colp believes that the loss of fluids alone cannot account for the rapid emaciation and debility in cases of duodenal fistula, for he found that they continued even when abundant fluids were supplied subcutaneously, intravenously or by rectal injection.

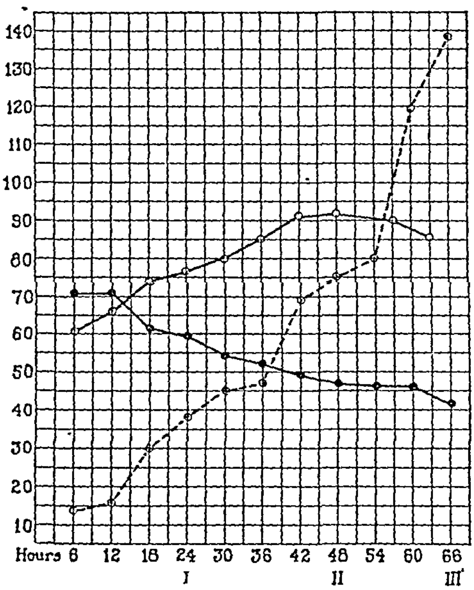
Findings in Experimental Duodenal Fistula

Date, 1924	Blood Plasma Chlorid, Mg. for Each 100 C.c.	Carbon Dioxid, Percentage by Volume	Urea Nitrogen, Mg. for Each 100 C.c.	Creatinin, Mg. for Each 100 C.c.
12/2...............	663	55.5	8.9	1.11
12/2...............	667	61.3	11.0	1.11
12/3...............	574	69 0	25.0	1.20
12/3...............	544	72.9	33.0	1.30
12/3...............	495	75 8	40.0	1.34
12/3...............	478	80.7	62.0	1.43
12/4...............	445	87.5	74.0	1.53
12/4...............	429	87.5	80 0	1.73
12/4...............	429	85.5	95 0	1.95
12/4...............	427	71.0	134.0	3.51
	376	....	153.0	5.30

Date, 1924	Urine Volume, C.c.	Total Nitrogen, Mg.	Urea and Ammonia Nitrogen, Mg.	Ammonia Nitrogen, Mg.	Chlorid, Mg.	Urea Nitrogen, Mg.
12/3	70	2,156	1869.0	23.8	14	1845.2
12/4	20	190	73.0	49.6	3	23.4
Fluid from Duodenal Fistula						
12/2	1,200	.....	139.2	51.6	2,652	87.6
12/4	1,260	.....	837.9	459 9	1,900	388 0
12/4	900	.....	733 5	327.88	810	405.7

LOSS OF FLUID

Intravenous injections of adequate amounts of chlorids in a concentrated solution, although they raise the blood chlorids to normal, have practically no effect on the length of life of animals with duodenal fistula. The blood urea continues to rise, alkalosis progresses, and the dogs live no longer than those without intravenous injections of the concentrated solution of chlorid. On the other hand, when from 500 to 700 c.c. of water is added to this solution, thus rendering it isotonic, and given twice daily, the blood urea remains practically normal and life may be maintained for three weeks or longer. It must be remembered that the administration of hypertonic solutions introduces factors that may be inimical to the action of the salt. A 5 per cent. glucose solution in 200 c.c. of water, without chlorid, injected intravenously four times daily, has no effect on the blood chlorids, but, by its diuretic influence, facilitates excretion of the accumulated nonprotein nitrogen in the blood. However, death occurs in practically the same manner after injections of glucose without chlorid, except that the blood chlorids reach a minimal concentration in the blood stream. When a 2 per cent. solution of sodium sulphate is injected intravenously, the same chemical changes occur in the blood as after the intravenous injection of the glucose solution. Sodium, therefore, apparently has no specific effect. It would seem that loss of fluid through the fistula in cases of duodenal fistula contributes to the toxemia, but this loss can be compensated for by intravenous injections of appropriate solutions, which, by their diuretic effect, assist in the elimination of toxins and retained blood nitrogen. Disturbance of fluid balance is apparent, and restoration of the balance essential.



Blood chemical findings in duodenal fistula: solid line with solid dots, chlorids; solid line with hollow dots, carbon dioxid; broken line, urea.

DUODENAL STASIS COINCIDENT TO ACUTE DUODENAL FISTULA

The striking similarity of the chemical changes in the blood which accompany experimental duodenal fistula to those described by others in cases of upper intestinal stasis has led us to investigate further the possible causal relation between intestinal stasis and fistula. In our experimental production of acute duodenal fistula, a short loop of duodenum, approximately 5 cm. in length, was incorporated in the abdominal wound by suturing the peritoneum and fascia for about 1 cm. in length beneath the loop in order to maintain it in position. A small opening was then made to the lumen of the duodenum, the edges of which were sutured to the edges of the upper portion of the skin incision.

In the control animals, the same procedure was lowed, except that the duodenum was not opened urally, he has even forgotten the distinction between a serum and a vaccine. In the language of the detail man, he "wants results," and he is anxious to know by what means he may secure these results.

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[8] Kanavel, A. B.: Duodenal Toxemia Following Rupture of the Duodenum, with Remarks on Extraperitoneal Rupture and a Report of Two Cases, J. A. M. A. 62: 759-761 (March 7) 1914.

[9] Wilms, quoted by Kanavel (Footnote 8).

In an inquiry into the question of antistreptococcus serum, the Council on Pharmacy and Chemistry of the American Medical Association has been anxious, among other things, to learn the attitude of clinicians toward their use. The shortest cut to such an appraisal appeared to be to ascertain the opinions on this subject of leading clinicians, especially of surgeons, gynecologists and obstetricians. I was commissioned to undertake the task of securing such a collective opinion, and my purpose in this communication is to present a summary of the result.

Letters were sent to a selected group of twenty-five, made up of men who by their preeminence might well be expected to reflect the most trustworthy clinical opinion of the day. Twelve of the group were general surgeons; thirteen were men identified with gynecology or obstetrics, or both. Many of them occupy chairs in large universities or medical schools, and all are the heads of large clinics. These points are mentioned to emphasize the fact that not only do those questioned have ample opportunity for clinical observation themselves, but also they are in such intimate contact with the current of medical literature that it would be almost incredible to suppose that they would not be familiar with and eagerly avail themselves of any really worth-while therapeutic agency. Each one was asked for "a general personal estimate" of the value or lack of value of antistreptococcic vaccine.

The replies can be placed in three groups, as follows:

Group 1. Sixteen replies were unequivocally unfavorable, the expressions of disfavor varying considerably in degree. None, however, leave any doubt as to the opinion of the writer.

Group 2. One reply stated that the author "did not know anything about antistreptococcus serum."

Group 3. Eight indicated that in certain cases or for certain indications it might be of service. Some of the replies in this group might almost as well be construed to place the writers in the first group.

In order that the reader may draw his own conclusions, it seems worth while to epitomize the replies by giving literal quotations of the expressions used by the writers. It may be added that nothing in the context of any letter changes the impression obtained from the "key" expression quoted. It may also be stated that, in Group 3, the extracts contain all that the various writers have written in favor of the serum.

progress of the disease in any way abated" (from the head of one of the largest obstetric clinics in America).

10. "I have occasionally given it, but I cannot say that I have found it of any particular value."

11. "The consensus of opinion is that it is of very doubtful value. My own personal experience thoroughly confirms this."

12. "In my entire experience I have had no grounds to feel that it has been of the slightest value in any case."

13. "In my own opinion, antistreptococcus serum is without therapeutic value."

14. "What little experience I have had has been unsatisfactory. It is owing to this dissatisfaction that I have not used it more."

15. "I have never thought very much of the use of antistreptococcus serums, and have had very little experience with their use."

16. "I gained the impression, both from my personal experience and from reading, that it is without practical value. Unless some change in its mode of production and potency is made, I shall consider its use a waste of money, and as giving unjustified hope to the friends of infected patients" (from the professor of obstetrics in a leading medical school).

GROUP 2

17. "Personally, I do not know anything about antistreptococcus serum."

GROUP 3

18 "I have gotten results, or thought I did, in some instances."

19. "I have occasionally seen the most brilliant results in virulently infected cases, results so sudden and striking that I am convinced if the proper strain happens to be selected, the serum is of the greatest benefit. In the majority of cases no benefit is observable, but I have never known the serum to do harm, given properly; therefore I would continue its use in selected cases."

20. "Personally, I have no confidence in antistreptococcic serum in an acute streptococcic disease. I have not seen any benefit in chronic streptococcic diseases. I am inclined to think that it may be of value if administered as a prophylactic where a streptococcic infection may be anticipated or feared, although of this I am not certain."

21. "In my experience there is practically no curative value to antistreptococcus serum; on the other hand, it has a definite protective action producing an immunity as does diphtheria serum in the potentially infected case."

22. "My personal opinion is that antistreptococcic serum is just about ready to develop into something of value."

23. "I have felt that it did good if the case was a rather mild sepsis; but in cases of acute fulminating sepsis, particularly in childbirth or abortion, I have found it entirely valueless."

24. "I have always felt that the indiscriminate employment of serums which is induced by the widespread advertising is harmful, especially in household practice. But undoubtedly the employment of this measure is productive of some good results under expert observation and attendance."

25. "My experience with the commercial products is limited

should be tried, but that in the acute cases in which the fistula is large, operative treatment is urgent. It is the general opinion that nonoperative methods of treatment, consisting of the immediate removal of the secretion from the fistula by the motor suction method of Erdman and Cameron, or by the water suction method of Lahey, should first be tried. It seems evident from the results of the experiments just reported that an effort should be made to control the toxemia with sodium chlorid and with sufficient fluid before operation is undertaken.

Berg's [22] method of pyloric exclusion with gastro-enterostomy or jejunostomy in the treatment of duodenal fistula serves three purposes. It preserves the gastric and duodenal secretion in the intestinal tract for normal absorption; it prevents nourishment from being lost through the duodenal fistula, and it thereby restores motility to the upper intestinal tract. The nourishment not only has caloric food value, but probably also stimulates gastro-intestinal motility. Colp, summarizing sixty-one cases of duodenal fistula, shows that the mortality rate following the operation of pyloric exclusion with gastro-enterostomy was about 84 per cent., whereas it was 50 per cent. following jejunostomy. The choice of operative procedure seems to be largely in favor of jejunostomy. One of the best methods of performing a jejunostomy to relieve upper intestinal stasis and to introduce nourishment into the intestinal tract is that of McKenna,[23] who uses two catheters, one directed upward to drain the accumulated duodenal secretion, the other directed downward to supply nourishment to the gastro-intestinal tract. Between feedings, the upper and lower tubes can be connected by means of a hollow glass bobbin which allows the duodenal secretion to pass directly into the jejunum, as advocated by Wilkie.[24] We have used this method with success in two cases of postoperative high intestinal stasis occurring after gastric resection for carcinoma of the stomach.

SUMMARY

In reported cases of duodenal fistula, no explanation has been given of the cause of the associated toxemia. This study of chemical changes in the blood, accompanying clinical and experimental duodenal fistula, has shown that in all instances there are increasing alkalosis, decreasing concentration of chlorids in the blood serum, and progressive rise in blood urea. These changes are similar to those found by Haden and Orr, and by Brown, Eusterman, Hartman and Rowntree, and Dixon, in cases of high intestinal stasis, and the response to intravenous injections of chlorid, glucose and water in cases of duodenal fistula is similar to that obtained by like measures in cases of high intestinal stasis. Postmortem examination of dogs with primary and secondary duodenal fistula shows the presence of a coincident duodenal stasis. The intravenous injection of sodium chlorid in concentrated solution, even if sufficient in amount to raise the blood chlorids to normal, has practically no effect in lengthening the life of animals with duodenal fistula. However, if a sufficient volume of water is added to the sodium chlorid solution and given twice daily, life may be maintained for three weeks or longer, during which time the blood chlorids are raised to their normal level, and the accumulation of nonprotein nitrogen in the blood is prevented. Intravenous injections of glucose solutions and sodium sulphate solutions, although they assist in the elimination of the retained nonprotein nitrogen in the blood, have no effect on the blood chlorids; the dogs died as quickly as though no intravenous injections had been given. The experiments lead to the conclusion that fluid balance plays some part in the toxemia accompanying duodenal fistula. Parallel studies of changes in the blood coincident to experimental gastric fistula show that, with an increase in the amount of acid discharged through the fistulous tract, the increase in the blood alkali reserve is still greater. The total amount of hydrochloric acid and the amount of chlorids discharged from the gastric fistula were sufficient to explain the increase in the alkalinity of the blood and the decrease in its chlorid content. To determine how much of the effect could be attributed to loss of bile and pancreatic secretion, the common bile duct and both pancreatic ducts were transplanted into the jejunum in two dogs, the loss of bile and pancreatic secretions being thus prevented. These dogs showed the same chemical changes in the blood as the dogs with duodenal fistula whose ducts had not been transplanted, and pursued the same clinical course.

Nonoperative methods of treatment, such as the suction method of Erdman, Cameron and Lahey, augmented by intravenous injections of a 1 per cent. solution of sodium chlorid, should be tried first in the treatment of duodenal fistula. When the fistula is large or the condition of the patient acute, operative treatment may be urgent. The operation of choice is then jejunostomy.

REPORT ON ANTISTREPTOCOCCUS SERUM

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In the thirty or thirty-five years during which the therapeutic use of antistreptococcic serums has been tried and discussed, one might suppose that there had been some crystallization of opinion with regard to their value or lack of value. Certainly they have not achieved anything like general employment. And yet in the advertising matter of commercial houses, statements and reports are printed which might lead one to believe that they are of decided value in the treatment of such conditions as puerperal sepsis, streptococcus septicemia, erysipelas, streptococcus meningitis and pyemia. In the publication of one house, for example, there is included a report of good results under each of the headings mentioned, together with a few others.

If the serum is of genuine therapeutic value, it is entitled to far more general employment than it now enjoys. If not, this fact should be established for the benefit of the rank and file of our profession, who cannot, with their limited individual clinical resources, be expected to settle it scientifically for themselves. Every practitioner is anxious to do everything possible for the cure of his patient, and, in the management of such desperate cases as those often resulting from streptococcic infection, he would wish to use the serum if it possesses therapeutic worth. He will not use it if it is useless or harmful. He is perhaps not always interested in the theory and technic of i. preparation, leaving this to those properly trai along this line. Frequently, and perhaps not

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22. Berg, A. A.: Duodenal Fistula: Its Treatment by Gastrojejunostomy and Pyloric Occlusion, Ann. Surg. **45**: 721-729, 1907.

23. McKenna, Hugh: Acute Intestinal Obstruction, with Special Reference to Paralytic Ileus Following Abdominal Operations, J. A. M. A. **80**: 1666-1669 (June 9) 1923.

24. Wilkie, D. P. D.: Extra-Abdominal Intestinal Anastomosis Through a Tube, Brit. J. Surg. **11**: 568-570 (Jan.) 1924.

the skin incision was closed over the loop. Such controls were deemed advisable in order to determine the effect of the incorporation of a loop of duodenum in the wound.

The chemical changes in the blood during the first four days in the control dogs in which a fistula had not been produced ran parallel to those in which the fistula had been produced. On the fifth day, the blood of the control animals returned to normal, whereas changes in the blood of the dogs with the fistula continued as described. The latter died a day or so later, and the control dogs lived normally. It would appear, therefore, that the incorporation of a loop of duodenum in the abdominal wall produces temporary changes in the duodenum, possibly due to interference with its nervous or muscular mechanism; the resulting duodenal stasis may be associated with the formation of toxins similar to those demonstrated by Whipple,[10] Ellis [11] and others, in intestinal obstruction. Chemical changes in the blood may result from the attempt to neutralize toxins until normal motility of the duodenum returns; and that such an attempt is successful is evidenced by the fact that the animal survives the period of adjustment and the blood returns to normal on the fifth day, after which time the appearance and actions of the animal are normal.

The incorporation of the loop of the duodenum in the wound is not entirely responsible for the duodenal stasis and the resulting blood changes, since in several dogs the production of a secondary duodenal fistula two weeks after recovery from the mechanical disturbance resulting from the incorporation of a portion of the duodenum was followed by chemical changes in the blood similar in all respects to those following primary acute duodenal fistula.

Necropsy of the dogs with primary acute duodenal fistula and secondary acute duodenal fistula showed in both groups a dilatation of the upper intestinal tract, confined entirely to the duodenum, and varying from two to three times normal. Such findings lead us to believe that toxicity resulting from experimental acute duodenal fistula may depend not only on the loss of gastric and duodenal secretion, but also on duodenal stasis resulting from interruption of the continuity of the duodenum and its attachment to the fistulous tract.

LOSS OF BILE AND PANCREATIC SECRETION

The duodenal fluids, discharged through the duodenal fistula, are made up, among other things, of bile, pancreatic secretion and secretion by the duodenal mucous membrane and the stomach. Kanavel and Colp both believed it was possible that the loss of bile and pancreatic secretion might play a part in the production of the alkalosis and toxemia. In two dogs, we transplanted the common bile duct and both pancreatic ducts into the jejunum, approximately 25 cm. below its origin, and consequently neither the bile nor the pancreatic secretion was lost through the duodenal fistula. The chemical changes in the blood were exactly the same as those following duodenal fistula without transplantation of ducts. There was no evidence of a return to normal at any time, so that the condition was analogous to duodenal fistula rather than to simple distortion of the duodenum.

DYSFUNCTION OF THE KIDNEY ASSOCIATED WITH DUODENAL FISTULA

Dysfunction of the kidney with high intestinal stasis was first pointed out by Tucker [12] in his study of postoperative vomiting in certain cases of gastro-enterostomy, and later by Brown, Eusterman, Hartman and Rowntree in their study of postoperative tetany. Most of these patients had albumin and casts in the urine. Dixon [13] found that the intravenous injection of sodium chlorid to replace that lacking in these cases of high intestinal stasis caused the disappearance of albumin and casts from the urine. These reappeared when, injections of sodium chlorid solution having been discontinued, the blood chlorids decreased. In cases of duodenal fistula with high nitrogen content of the blood, there is a progressive decrease in the amount of urea excreted in the urine and an increase in the amount of urea in the duodenal fluid.

LOSS OF GASTRIC SECRETIONS

In considering the effects of duodenal fistula, not only must the loss of body fluids be taken into account, but also the loss of a part of the duodenal and gastric secretions.[14] It is estimated that from approximately 250 to 400 c.c. of hydrochloric acid is formed by the normal gastric mucous membrane of a dog in twenty-four hours. When there is a duodenal fistula, part of this acid is lost through it. If this is a factor in the production of the alkalosis, a gastric fistula might be expected to show a greater increase in the alkalinity of the blood as a result of greater loss of hydrochloric acid. In parallel studies of chemical changes in the blood, we found that the alkalinity of the blood was greater in the presence of experimental gastric fistula, and, furthermore, that there was a greater increase in the reserve alkalinity of the blood. Similarly, the amount of chlorids in the gastric secretion lost through the gastric and duodenal fistulas is sufficient to explain in part the decrease in the chlorids in the blood. The loss of chlorids through gastric fistula often totals from 3 to 5 gm. in twenty-four hours.

METHODS OF TREATMENT

Lilienthal,[15] in 1901, advocated gastro-enterostomy in the treatment of duodenal fistula, to which Berg,[16] in 1903, added pyloric exclusion. The later work of Keeling,[15] Pannett,[17] Erdman,[18] McGuire[19] and Lahey[20] has directed attention to the low risk and successful outcome of jejunostomy alone in the treatment of duodenal fistula. Cheever [21] has advocated diluting the gastric and pancreatic secretions discharged through the fistulous tract by administering large amounts of fluid by mouth, to promote healing of the fistula. Rigby, from his study of six cases of duodenal fistula, decided that in the less severe cases simple local treatment should be tried, but that in the acute cases in which the fistula is large, operative treatment is urgent. It is the general opinion that nonoperative methods of treatment, consisting of the immediate removal of the secretion from the fistula by the motor suction method of Erdman and Cameron, or by the water suction method of Lahey, should first be tried. It seems evident from the results of the experiments just reported that an effort should be made to control the toxemia with sodium chlorid and with sufficient fluid before operation is undertaken.

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[10] Whipple, G. H.: Intoxication of Intestinal Obstruction, in Contributions to Medical and Biological Research, dedicated to Sir William Osler, New York, P. B. Hoeber, 1919, pp. 1065-1073.

[11] Ellis, J. W.: The Cause of Death in High Intestinal Obstruction, Ann. Surg. **80**: 429-448 (April) 1922.

[12] Tucker, W. J.: Uremia Following Gastro-Enterostomy (unpublished).

[13] Dixon, C. F.: The Value of Sodium Chlorid in the Treatment of Duodenal Intoxication, J. A. M. A. **82**: 1498-1502 (May 10) 1924.

[14] Ivy, A. C.: Causes of Gastric Secretion, J. A. M. A. **85**: 877-880 (Sept. 19) 1925.

[15] Quoted by Colp (Footnote 1).

[16] Berg, A. A.: Einseitige Ausschaltung des Duodenums bei perforierender Geschwürbildung an der hinteren Wand des absteigenden Duodenalastes, Zentralbl. f. Chir. **30**: 556-557, 1903.

[17] Pannett, C. A.: Contribution to the Treatment of Duodenal Fistula, with the Report of a Successful Case, Lancet **1**: 1109-1111, 1914.

[18] Erdman, S.: Laceration of the Duodenum: Duodenal Fistula: Jejunostomy Feeding; Parotiditis Feeding; Recovery, Ann. Surg. **73**: 793-797, 1921.

[19] McGuire, Stuart: The Treatment of Duodenal Fistula, Surg., Gynec. & Obst. **30**: 460-461 (May) 1920.

[20] Lahey, F. H.: The Treatment of Duodenal Fistulae by Suction, Surg. Clin. N. Am. **4**: 1489-1492, 1924.

[21] Cheever, David: *Concerning Traumatic Rupture of the Duodenum* and Duodenal Fistula, with the Report of a Case, Boston M. & S. J. **173**: 454-457, 1915.

Berg's[22] method of pyloric exclusion with gastro-enterostomy or jejunostomy in the treatment of duodenal fistula serves three purposes. It preserves the gastric and duodenal secretion in the intestinal tract for normal absorption; it prevents nourishment from being lost through the duodenal fistula, and it thereby restores motility to the upper intestinal tract. The nourishment not only has caloric food value, but probably also stimulates gastro-intestinal motility. Colp, summarizing sixty-one cases of duodenal fistula, shows that the mortality rate following the operation of pyloric exclusion with gastro-enterostomy was about 84 per cent., whereas it was 50 per cent. following jejunostomy. The choice of operative procedure seems to be largely in favor of jejunostomy. One of the best methods of performing a jejunostomy to relieve upper intestinal stasis and to introduce nourishment into the intestinal tract is that of McKenna,[23] who uses two catheters, one directed upward to drain the accumulated duodenal secretion, the other directed downward to supply nourishment to the gastro-intestinal tract. Between feedings, the upper and lower tubes can be connected by means of a hollow glass bobbin which allows the duodenal secretion to pass directly into the jejunum, as advocated by Wilkie.[24] We have used this method with success in two cases of postoperative high intestinal stasis occurring after gastric resection for carcinoma of the stomach.

SUMMARY

In reported cases of duodenal fistula, no explanation has been given of the cause of the associated toxemia. This study of chemical changes in the blood, accompanying clinical and experimental duodenal fistula, has shown that in all instances there are increasing alkalosis, decreasing concentration of chlorids in the blood serum, and progressive rise in blood urea. These changes are similar to those found by Haden and Orr, and by Brown, Eusterman, Hartman and Rowntree, and Dixon, in cases of high intestinal stasis, and the response to intravenous injections of chlorid, glucose and water in cases of duodenal fistula is similar to that obtained by like measures in cases of high intestinal stasis. Postmortem examination of dogs with primary and secondary duodenal fistula shows the presence of a coincident duodenal stasis. The intravenous injection of sodium chlorid in concentrated solution, even if sufficient in amount to raise the blood chlorids to normal, has practically no effect in lengthening the life of animals with duodenal fistula. However, if a sufficient volume of water is added to the sodium chlorid solution and given twice daily, life may be maintained for three weeks or longer, during which time the blood chlorids are raised to their normal level, and the accumulation of nonprotein nitrogen in the blood is prevented. Intravenous injections of glucose solutions and sodium sulphate solutions, although they assist in the elimination of the retained nonprotein nitrogen in the blood, have no effect on the blood chlorids; the dogs died as quickly as though no intravenous injections had been given. The experiments lead to the conclusion that fluid balance plays some part in the toxemia accompanying duodenal fistula. Parallel studies of changes in the blood coincident to experimental gastric fistula show that, with an increase in the amount of acid discharged through the fistulous tract, the increase in the blood alkali reserve is still greater. The total amount of hydrochloric acid and the amount of chlorids discharged from the gastric fistula were sufficient to explain the increase in the alkalinity of the blood and the decrease in its chlorid content. To determine how much of the effect could be attributed to loss of bile and pancreatic secretion, the common bile duct and both pancreatic ducts were transplanted into the jejunum in two dogs, the loss of bile and pancreatic secretions being thus prevented. These dogs showed the same chemical changes in the blood as the dogs with duodenal fistula whose ducts had not been transplanted, and pursued the same clinical course.

Nonoperative methods of treatment, such as the suction method of Erdman, Cameron and Lahey, augmented by intravenous injections of a 1 per cent. solution of sodium chlorid, should be tried first in the treatment of duodenal fistula. When the fistula is large or the condition of the patient acute, operative treatment may be urgent. The operation of choice is then jejunostomy.

REPORT ON ANTISTREPTOCOCCUS SERUM

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In the thirty or thirty-five years during which the therapeutic use of antistreptococcic serums has been tried and discussed, one might suppose that there had been some crystallization of opinion with regard to their value or lack of value. Certainly they have not achieved anything like general employment. And yet in the advertising matter of commercial houses, statements and reports are printed which might lead one to believe that they are of decided value in the treatment of such conditions as puerperal sepsis, streptococcus septicemia, erysipelas, streptococcus meningitis and pyemia. In the publication of one house, for example, there is included a report of good results under each of the headings mentioned, together with a few others.

If the serum is of genuine therapeutic value, it is entitled to far more general employment than it now enjoys. If not, this fact should be established for the benefit of the rank and file of our profession, who cannot, with their limited individual clinical resources, be expected to settle it scientifically for themselves. Every practitioner is anxious to do everything possible for the cure of his patient, and, in the management of such desperate cases as those often resulting from streptococcic infection, he would wish to use the serum if it possesses therapeutic worth. He will not use it if it is useless or harmful. He is perhaps not always interested in the theory and technic of its preparation, leaving this to those properly trained along this line. Frequently, and perhaps not unnat urally, he has even forgotten the distinction between a serum and a vaccine. In the language of the detail man, he "wants results," and he is anxious to know by what means he may secure these results.

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[22] Berg, A. A.: Duodenal Fistula: Its Treatment by Gastrojejunostomy and Pyloric Occlusion, Ann. Surg. **45**: 721-729, 1907.

[23] McKenna, Hugh: Acute Intestinal Obstruction, with Special Reference to Paralytic Ileus Following Abdominal Operations, J. A. M. A. **80**: 1666-1669 (June 9) 1923.

[24] Wilkie, D. P. D.: Extra-Abdominal Intestinal Anastomosis Through a Tube, Brit. J. Surg. **11**: 568-570 (Jan.) 1924.

In an inquiry into the question of antistreptococcus serum, the Council on Pharmacy and Chemistry of the American Medical Association has been anxious, among other things, to learn the attitude of clinicians toward their use. The shortest cut to such an appraisal appeared to be to ascertain the opinions on this subject of leading clinicians, especially of surgeons, gynecologists and obstetricians. I was commissioned to undertake the task of securing such a collective opinion, and my purpose in this communication is to present a summary of the result.

Letters were sent to a selected group of twenty-five, made up of men who by their preeminence might well be expected to reflect the most trustworthy clinical opinion of the day. Twelve of the group were general surgeons; thirteen were men identified with gynecology or obstetrics, or both. Many of them occupy chairs in large universities or medical schools, and all are the heads of large clinics. These points are mentioned to emphasize the fact that not only do those questioned have ample opportunity for clinical observation themselves, but also they are in such intimate contact with the current of medical literature that it would be almost incredible to suppose that they would not be familiar with and eagerly avail themselves of any really worthwhile therapeutic agency. Each one was asked for "a general personal estimate" of the value or lack of value of antistreptococcic vaccine.

The replies can be placed in three groups, as follows:

Group 1. Sixteen replies were unequivocally unfavorable, the expressions of disfavor varying considerably in degree. None, however, leave any doubt as to the opinion of the writer.

Group 2. One reply stated that the author "did not know anything about antistreptococcus serum."

Group 3. Eight indicated that in certain cases or for certain indications it might be of service. Some of the replies in this group might almost as well be construed to place the writers in the first group.

In order that the reader may draw his own conclusions, it seems worth while to epitomize the replies by giving literal quotations of the expressions used by the writers, It may be added that nothing in the context of any letter changes the impression obtained from the "key" expression quoted. It may also be stated that, in Group 3, the extracts contain all that the various writers have written in favor of the serum.

GROUP 1

1. "It seems to be the consensus of opinion here that they are of no value."

2. "In my limited experience, it has been rather disappointing."

3. "I gave them a fair trial for one year and felt that they did no good and carried a certain threat of harm, so that we no longer use them."

4. "I have been disappointed in the use of this product."

5. "It seems to me that there is no evidence in favor of this serum."

6. "I have never found the slightest value clinically in antistreptococcus serum."

7. "This serum is of no value, and I have not employed it for a number of years."

8. "It probably has little if any value."

9. "As the various serums have been developed over a term of years we have tried them out. I cannot think of one instance in which I consider the patient was benefited, or progress of the disease in any way abated" (from the head of one of the largest obstetric clinics in America).

10. "I have occasionally given it, but I cannot say that I have found it of any particular value."

11. "The consensus of opinion is that it is of very doubtful value. My own personal experience thoroughly confirms this."

12. "In my entire experience I have had no grounds to feel that it has been of the slightest value in any case."

13. "In my own opinion, antistreptococcus serum is without therapeutic value."

14. "What little experience I have had has been unsatisfactory. It is owing to this dissatisfaction that I have not used it more."

15. "I have never thought very much of the use of antistreptococcus serums, and have had very little experience with their use."

16. "I gained the impression, both from my personal experience and from reading, that it is without practical value. Unless some change in its mode of production and potency is made, I shall consider its use a waste of money, and as giving unjustified hope to the friends of infected patients" (from the professor of obstetrics in a leading medical school).

GROUP 2

17. "Personally, I do not know anything about antistreptococcus serum."

GROUP 3

18. "I have gotten results, or thought I did, in some instances."

19. "I have occasionally seen the most brilliant results in virulently infected cases, results so sudden and striking that I am convinced if the proper strain happens to be selected, the serum is of the greatest benefit. In the majority of cases no benefit is observable, but I have never known the serum to do harm, given properly; therefore I would continue its use in selected cases."

20. "Personally, I have no confidence in antistreptococcic serum in an acute streptococcic disease. I have not seen any benefit in chronic streptococcic diseases. I am inclined to think that it may be of value if administered as a prophylactic where a streptococcic infection may be anticipated or feared, although of this I am not certain."

21. "In my experience there is practically no curative value to antistreptococcus serum; on the other hand, it has a definite protective action producing an immunity as does diphtheria serum in the potentially infected case."

22. "My personal opinion is that antistreptococcic serum is just about ready to develop into something of value."

23. "I have felt that it did good if the case was a rather mild sepsis; but in cases of acute fulminating sepsis, particularly in childbirth or abortion, I have found it entirely valueless."

24. "I have always felt that the indiscriminate employment of serums which is induced by the widespread advertising is harmful, especially in household practice. But undoubtedly the employment of this measure is productive of some good results under expert observation and attendance."

25. "My experience with the commercial products is limited, but I have seen good effects that seemingly were attributable to the serum. In cases in which good effects are obtained, no doubt the immunologic state of the infecting organism was like that of the strain or strains with which the serum was prepared. In the diseases in which the infecting strains are more homogeneous, as epidemic poliomyelitis, epidemic hiccup, epidemic encephalitis, scarlet fever and erysipelas, the problem is greatly simplified and therapeutic results of great value have been obtained. I therefore feel that the good from the antistreptococcus serums now on the market is necessarily limited but that there is an undoubted future for their use in specific diseases in which the strains are immunologically homogenous" (from a leading surgeon and his bacteriologic colleague).

SUMMARY

Of twenty-five leading surgeons, gynecologists and obstetricians who were questioned as to their opinion of antistreptococcus serum, sixteen considered it of no value, one said he knew nothing about it, and eight expressed the opinion that, while usually unsatisfactory, it might for certain indications be of real value. The chief of these was for a supposed protective or prophylactic action, while occasional good results are mentioned where the proper strain of streptococcus happens to be selected. Not a single one of the twenty-five questioned evinced any degree of enthusiasm for the serum.

INJECTION OF THE SCIATIC NERVE AS SUBSTITUTE FOR FEMORAL PERIARTERIAL SYMPATHECTOMY

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AND
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Few operative procedures have aroused more interest in recent years than has periarterial sympathectomy. This operation, devised by Leriche and having as its principle vasodilation following stripping of the adventitia of the main artery of the part, is still the object of trial and speculation.

Many anatomists and surgeons are at variance with the theory that a large part of the vasomotor nerve fibers course to the arterioles and capillaries of the extremities within the adventitia of the parent arteries.

Langley[1] resected the lumbar sympathetic ganglions in cats and secured vasodilatation in the extremities, which was abolished when the sciatic and crural nerves were severed. Kramer and Todd[2] studied the distribution of the vasomotor fibers to the arm, and Potts[3] made a similar study of the innervation of the blood vessels of the leg with similar conclusions—that the nerve fibers are supplied to the blood vessels at regular levels throughout their course, and that only a relatively small number of fibers accompany the larger arterial stems to terminate in the arterioles and capillaries.

Milkó[4] stimulated the sheath of the femoral artery electrically in dogs and secured no plethysmographic changes. Vasodilatation was secured, however, when the sciatic nerve was severed. Schilf[5] secured no increase in the blood flow by cannula in dogs, when the adventitia of the femoral artery was stimulated. Leriche,[6] however, states that experimental animals are not satisfactory for the study of sympathectomy, and reports a temperature increase in the foot of from 2 to 3 degrees C. for about fifteen days, as the average result of femoral sympathectomy in human subjects.

Läwen[7] stretched the sciatic nerve and the saphenous nerve in an old subject as a remedy for painful arteriosclerosis and subnormal temperature in one foot. He produced a "hot foot" and symptomatic cure but also motor paralysis. Capillary microscopy showed dilated capillaries in the toes of the side operated on. Two years after the operation, there was still 1.5 degrees difference in temperature between the two feet, Läwen[8] later used ethyl chloride to freeze the sciatic nerve in addition to stretching and crushing, and he states that by this means he avoided amputation in an early case of senile gangrene.

Wiedkopf[9] noted that after blocking of the brachial plexus (three trunks) with procaine, the temperature of the corresponding hand was raised 4 or 5 degrees for several hours. He found no plethysmographic changes in the dog's foot following femoral sympathectomy, but a marked change following interruption of the sciatic nerve.

Lewis and Gatewood[10] have used a 60 per cent alcoholic injection into the nerve trunks in the treatment of causalgia. Callander[11] secured no increase in blood pressure following sympathectomy and does not believe the main vessel to be the pathway for the vasomotor nerves.

Periarterial sympathectomy is not free of difficulty and danger. Brandenburg,[12] in a collection of 103 cases of eight surgeons, reports three cases of secondary hemorrage and one of "spurious aneurysm" following femoral sympathectomy. Milkó[4] reports perforation of the femoral artery following sympathectomy. Matons[13] reports a similar accident in the case of the external iliac artery. One of us has on two occasions found it necessary to suture pinhole openings in the femoral artery during the performance of sympathectomy, with no ill effects.

As sympathectomy is not without risks and is attended by conflicting and irregular results, the sciatic nerve was turned to as a means of securing vasodilatation and improved circulation in the extremities in the cases to be reported.

RESULTS OF CLINICAL INJECTION OF SCIATIC NERVE

Twelve patients, all males, ranging in age from 9 to 70, suffering from extensive tropical ulcer of the lower third of one leg, were subjected to open injection of the sciatic nerve at the Hospital Santo Tomas, Panama, during the summer of 1924. The nerve was exposed in the middle third of the thigh (to avoid the highest muscular branches) and injected with a hypodermic needle and Luer syringe. Six patients were injected with physiologic sodium chloride solution, solutions of procaine, and 5 per cent alcohol solutions with slight or no vasodilatation. The remaining six were injected with 15 per cent alcohol so as to produce pronounced "ballooning" of the nerve for 2 or 3 cm. of its course. Usually from 5 to 10 cc. of the solution was required to produce this, depending on the number of puncture holes that are made with the needle and the amount of solution that escapes. The nerve is lifted up with tapes, and stretching is avoided.

In all the cases so treated, vasodilatation of the corresponding foot and lower third of the leg developed, as shown by flushing and hyperthermia of the parts. The average duration of vasodilatation was about one month, and the average temperature increase throughout the entire period was 1 degree C., being highest for about seven to ten days after the injection and then falling slowly to the temperature of the uninjected leg, as shown in the chart. In control cases of similar leg ulcers, the temperatures taken daily over long periods were found to be 0.13 degree higher on

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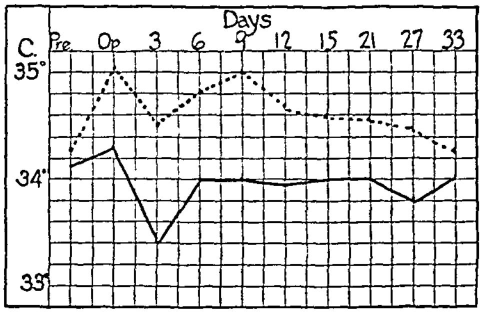
1. Langley, J. N.: J. Physiol. **58**: 70 (Oct.) 1923.
2. Kramer, J. G., and Todd, T. W.: Anat. Rec. **8**: 243, 1914.
3. Potts, L. W.: Anat. Anz. **47**: 138, 1914.
4. Milkó, W.: Zentralbl. f. Chir. **51**: 513-515 (March 15) 1924.
5. Schilf, E.: Klin. Wchnschr. **3**: 346 (Feb. 26) 1924.
6. Leriche, R.: Presse méd. **30**: 1105-1108 (Dec. 23) 1922.
7. Läwen, A.: München. med. Wchnschr. **69**: 389-392 (March 17) 1922.
8. Läwen, A.: Centralbl. f. Chir. **50**: 1346-1350 (Sept. 1) 1923
9. Wiedkopf, O.: Klin. Wchnschr. **3**: 728-729 (April 22) 1924.
10. Lewis, Dean; and Gatewood, Wesley: Treatment of Causalgia, J. A. M. A. **74**: 1 (Jan. 3) 1920.
11. Callander, C. L.: Ann. Surg. **77**: 15-29 (Jan.) 1923.
12. Brandenburg, K.: Med. Klin. **20**: 532-535 (April 20) 1924.
13. Matons, E.: Semana Méd. **2**: 98-103 (July 13) 1922.

the side of the ulcer. Temperatures were taken by inserting the bulb of a thermometer between the second and third toes of each foot.

Of these six patients, three developed varying degrees of paralysis. One had paresthesia of the toes lasting for twenty-two days; another, anesthesia and paresis of the foot lasting fifty days, and the third, anesthesia and paralysis of the foot which had persisted when last seen (sixty days after injection) but had developed no toe drop or limp in walking. This patient was emaciated and anemic at the time of injection, and had a thin sciatic nerve and attenuated substance of Schwann. In general, the patients with some degree of motor or sensory disturbance following the injection showed the most marked vasodilatation, the patient with the complete paralysis averaging 2.07 degrees C. difference in temperature for fifty days. The lowest average was 0.52 degree C. elevation in temperature, in a man, aged 58, with marked arteriosclerosis.

In every case, healing of the leg ulcer was apparently hastened by the improved circulation of the limb, all of the cases in which injection was done being healed within five weeks. This is considerably faster than the average time required for the healing of tropical leg ulcers. The stay in bed of two weeks following the injection doubtless was a factor in the improved healing rate. Granulations in the injected patients were redder and healthier than in the controls.



Composite temperature curve of the feet of six men treated with 15 per cent alcoholic injection of the sciatic nerve for tropical leg ulcer: broken line, injected leg; solid line, uninjected leg.

A recent series of sciatic injections in dogs by Mosser and Taylor[14] under the direction of Dr. Joshua Sweet in the laboratory of experimental surgery of the University of Pennsylvania confirm in principle these clinical observations, with the exception that in dogs in all cases some degree of paralysis developed, which, however, was of limited duration.

CONCLUSIONS

1. Injection of the sciatic nerve with 15 per cent alcohol is a far more reliable means of producing hyperthermia than is periarterial sympathectomy of the femoral artery. It was found of use in the treatment of tropical leg ulcer.
2. It is possible in human subjects to produce hyperthermia without producing any paralysis.
3. The degree of hyperthermia is proportional to the degree of nerve interruption; i. e., to the degree of paralysis produced.
4. The more prolonged the infiltration of the nerve, and the more handling, needling and traction employed, the greater will be the degree of interruption. Thorough injection of 2 or 3 cm. of the nerve is necessary, with even distribution of the solution throughout the nerve.
5. Patients who are thin and emaciated should be injected less vigorously than well nourished subjects.
6. Any paralysis or paresis is of comparatively short duration (from two to three months).
7. Arteriosclerotic patients do not respond well.
8. Marked variations in the temperature of the feet and toes result from atmospheric temperature changes, wetting, effect of heat and sunlight, bedclothes and use of the legs. Daily measurements over long periods are necessary to establish temperature differences.
9. The indications for sciatic injection are those for sympathectomy; i. e., any condition in which it is desired to improve the circulation of an extremity, such as threatened gangrene, Raynaud's disease, intermittent claudication, erythromelalgia, early tuberculosis, ulceration, trophic disturbances, etc. It is not of value in arteriosclerotic gangrene and Buerger's disease.

THE REPAIRED HEART

ITS BEHAVIOR IN BRONCHOPNEUMONIA

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Repair of the lacerated heart has become fairly common. The incidence and success of this operation have recently been summarized by Davenport.[1] Most cases that terminate successfully are uncomplicated, and the ability of the repaired heart subsequently to carry on during acute illnesses or to meet the demands of an active life has seldom been reported.

In the case here reported, the heart, in which a large laceration had been sutured, was called on in three weeks to endure the added strain of a severe bronchopneumonia.

REPORT OF CASE

A. L., a negro laborer, aged 24, was stabbed just inside the left nipple with a long bladed pocket knife, on the evening of July 23, 1925. He was seen in the emergency room of the Youngstown Hospital forty-five minutes later, in extreme shock and practically pulseless from the severe hemorrhage. The chest was at once opened, under ether and oxygen analgesia, portions of the third and fourth ribs being resected and a triangular flap being turned back. This exposed the pericardium, in which a rent was seen. On enlarging this, I could see the heart beating at a delirious rate and showing a laceration 1½ inches (3.8 cm.) long high on the left ventricle. The heart was brought up into the wound and the laceration closed with four interrupted sutures of medium silk. The pericardium was closed by a continuous suture of chromicized catgut and the chest wall with interrupted silkworm-gut. In the meantime the intern was giving physiologic sodium chlorid solution in the vein.

The patient reacted well and two weeks later was allowed up on a back rest. The temperature was 98.4; respirations, 22; pulse, 100. Except for occasional fleeting pains in the cardiac region, he was comfortable. No treatment was used for the rapid pulse rate other than an ice cap over the heart.

On the evening of August 12, the twentieth day, the temperature rose to 101.4, with no symptoms. The next day it rose higher; the patient appeared quite ill and complained of pain in the right side of the abdomen. A friction rub could be heard at the right base. Respiration became labored, as signs became more definite in the right lower lobe, and a new area of consolidation appeared in the middle lobe. The patient was depending almost entirely on the right lung for aeration, as the left was partially collapsed. Soon there were signs of involvement in the left apex.

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[14] Mosser and Taylor: To be published.

[1] Davenport, G. L.: Suture of Wound of the Heart: Ligating the Interventricular Branch of the Coronary Artery and Vein, J. A. M. A. 82:1840 (June 7) 1924.

The heart at this time was doing fairly well. The pulse was 120, regular and of good volume, although the systolic blood pressure was only 100. Digitalis was given in the form of 30 minims (1.9 cc.) of a standardized tincture every four hours. Very little effect was noticed from this dosage, the rate and blood pressure remaining the same. In a few days he became nauseated and the dose was reduced, although the heart did not exhibit the usual phenomena of digitalization.

After a week's illness some improvement was noticed, and, August 28, the temperature was down and the patient was comfortable, although bronchial breathing and crepitant râles persisted in the right middle lobe for some time. By September 13, the patient was up and about. The pulse rate remained at 100, increasing to 120 on moderate exercise but returning to 100 after three minutes' rest. The heart was of normal size, displaced to the right, lying directly in the midline. There was an adhesive pericarditis with systolic retraction of the chest wall. The sounds had good muscular quality, and no murmurs were heard.

COMMENT

The behavior of the repaired heart in acute pulmonary infection is probably influenced by the situation of the injury. It seems reasonable to assume that the commonly injured right ventricle would be more severely handicapped in forcing blood through the congested lung. Damage to the right auricle would be likely to produce greater disturbance of rate and rhythm.

In this case the heart behaved satisfactorily in every respect except that of the rate. Although rapid, the pulse was always regular in time and the beats were equal in volume. At the time of maximum lung involvement, the circulation was only moderately embarrassed.

Digitalis in the dosage given exhibited but little effect in slowing the heart. It is assumed that the vagus stimulation was not sufficient to overbalance the increased irritability of the myocardium. The presence of nonabsorbable suture material would perhaps tend to prolong the irritability.

226 North Phelps Street.

Clinical Notes, Suggestions and New Instruments

ACCESSORY LOBE OF LIVER ATTACHED ONLY TO THE GALLBLADDER

Harris Fenton Brownlee, M.D., Danbury, Conn.

While recently exploring the abdomen of a young woman, with a clinical and a roentgen-ray diagnosis of chronic appendicitis with adhesions deforming the duodenum, which diagnosis was correct, I encountered a neat curiosity never previously noted in my work.

Attached to the upper surface of a perfectly normal gallbladder was a miniature lobe of liver tissue, measuring about 1½ inches (3.7 cm.) transversely and about 1 inch (2.5 cm.) in the opposite direction.

The center was about one-fourth inch (0.6 cm.) thick and was attached firmly to the gallbladder, while the edges were thin, well defined, and could be lifted a short distance from the surface of the gallbladder.

This little accessory lobe had no connection whatever with the liver, being some distance away, and no connecting blood vessels were visible.

As the gallbladder appeared perfectly normal and it seemed unwise to add any more raw surfaces to those already in process of repair, this interesting curiosity, after demonstration to those present, was allowed to remain.

324 Main Street.

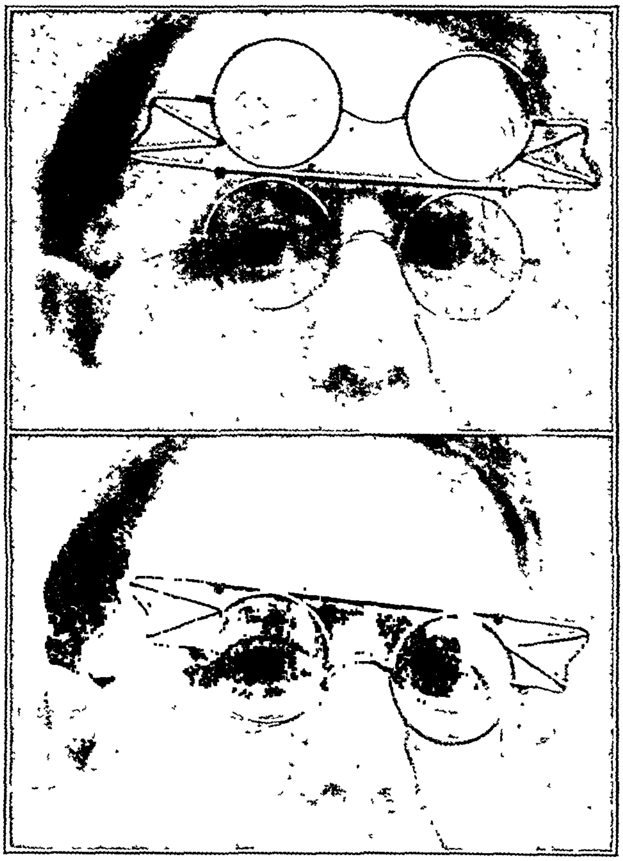
FULL VISION BIFOCAL OPERATING SPECTACLES *

Myron Metzenbaum, M.D., Cleveland

Many forms of glasses have been devised to enable persons to see at a distance with one part of the lens and at a close range with the other part.

The bifocal is usually placed in the lower segment, although sometimes it is in the upper segment or in the center. These various arrangements of lenses afford either long or short distant vision through only a part of the lens, and it is impossible to view the whole field in all directions.

The spectacles recently devised consist of two pairs of lenses in two separately hinged frames. The first pair gives full vision for distance. When the second pair is lowered against the first pair, it supplies the additional lenses necessary for full near vision. For certain work, the full vision is desirable or even necessary.



Full vision bifocal operating spectacles, consisting of two pairs of lenses in two separately hinged frames.

For the ear, nose and throat specialist whose offices are usually made up of several units and who goes back and forth from one patient to another, this type of spectacles is very practical. During an examination the additional frame is lowered, giving a full field near vision, and it is raised when walking to the next patient.

In the operating room the spectacles are worn for distant vision, and the nurse lowers the additional frame when the operator wishes to begin.

Each frame holds a pair of single lenses, or one or both pairs may be made up of bifocals, so that various combinations can be obtained.

The spectacle frames are neither patented nor copyrighted, and at present are hand-made by the American Optical Company, Rose Building, Cleveland.

736 Rose Building.

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

Special Articles

DIPHTHERIA IN CERTAIN LARGE CITIES OF EUROPE IN 1924 *

The diphtheria death rates in the large cities of Great Britain in 1924 (Table 1) were on the whole very similar to those observed in the large cities of the United States for the same year.[1] The range, however, was somewhat greater (in the United States, from 1.6 to 23.0; in Great Britain from 0.0 to 25.7). A larger proportion of the British cities had a rate of under 10 (73 per cent, as compared with 54 per cent of the cities in the United States). The Scottish cities Glasgow, Edinburgh and Dundee all report high rates; that of Aberdeen is relatively low. The average death rate from diphtheria in the Scottish cities for the preantitoxin period 1858-1895 was much higher than that of most English towns. Manchester had a death rate eight times that of Birmingham, and London had a rate almost exactly like that of New York. There is no obvious relation between the degree of industrialization of a city and its diphtheria death rate.

Table 1.—*Death Rates of Cities in Great Britain from Diphtheria (Including Croup) per Hundred Thousand Population, 1924*

Southend	0.0	Woolwich	6.4
Rhondda	0.4	Hull	6.6
Birmingham	1.0	Salford	6.6
Walthamstow	3.0	Aberdeen	6.8
Bradford	3.1	Swansea	6.8
Tottenham	3.2	Portsmouth	7.2
East Ham	3.4	Middlesborough	7.3
Huddersfield	3.6	Leyton	7.5
Nottingham	3.6	Burnley	7.6
Stoke-on-Trent	3.6	Manchester	8.1
St. Helen's	3.7	Liverpool	8.4
Stockport	3.9	Southampton	10.2
Croydon	4.0	Plymouth	10.5
Sheffield	4.0	Gateshead	10.8
Cardiff	4.4	South Shields	11.1
Wolverhampton	4.4	London	12.3
Preston	4.8	Glasgow	12.6
Sunderland	4.8	Greenwich	13.6
Newcastle-on-Tyne	4.9	Leicester	14.5
Brighton	5.0	*Norwich*	14.5
Willesden	5.2	Bristol	15.8
Lewisham (Catford)	5.5	Edinburgh	16.8
Leeds	5.7	Derby	20.9
Coventry	6.0	Dundee	25.7

Table 2.—*Death Rates of Cities in Germany from Diphtheria (Including Croup) Per Hundred Thousand Population, 1924*

Lubeck	0.8	Saarbrücken	5.8
Gelsenkirchen	0.9	Altona	5.9
Krefeld	1.5	Leipzig	5.9
Münster in Westphalia	1.9	Brunswick	6.4
Dresden	2.1	Halle	6.6
Düsseldorf	2.1	Hamborn-on-the-Rhine	6.8
Nuremberg	2.2	Karlsruhe	7.3
Hanover	2.3	Chemnitz	7.4
Berlin	2.9	*Mainz*	7.6
Hamburg	3.0	Bochum	7.7
Barmen	3.1	Magdeburg	7.7
Aachen	3.2	Bremen	7.8
Frankfort-on-the-Main	3.6	Cassel	7.9
Stuttgart	4.2	Stettin	8.7
Elberfeld	5.1	*Cologne*	9.6
Duisburg	5.5	Augsburg	9.8
Breslau	5.6	Plauen	11.5
Munich	5.7	Mannheim	19.5
Essen	5.7		

Table 3.—*Death Rates of Cities in France from Diphtheria (Including Croup) Per Hundred Thousand Population, 1924*

Toulouse	0.0	Brest	6.7
Roubaix	0.9	Le Havre	6.7
Nantes	1.6	Lyons	7.1
Marseilles	1.8	Nancy	7.7
Rheims	4.0	Lille	8.0
St. Etienne	4.2	Strasbourg	9.6
Bordeaux	4.8	Rouen	11.3
Paris	5.5		

In Germany (Table 2) the range for the thirty-seven cities is from 0.8 (Lubeck) to 19.5 (Mannheim). Berlin and Munich have very much lower death rates than either London or New York (Berlin, 2.9; Munich, 5.7; New York, 11.9, and London, 12.3). It might have been supposed that climatic conditions in Germany would make for a somewhat higher rate than in England, but 59 per cent of the German cities had rates of 5.0 and over, and 60 per cent of the British cities had the same rates. In the decade 1880-1890, the diphtheria mortality was considerably greater in Berlin and the German cities than in Great Britain.

Table 4.—*Death Rates of European Cities Outside Great Britain, Germany and France, from Diphtheria (Including Croup) Per Hundred Thousand Population, 1924*

Geneva, Switzerland	0.0	Copenhagen, Denmark	4.9
Ghent, Belgium	0.6	Odessa, Russia	5.2
Bucharest, Roumania	1.2	Lorca, Spain	5.3
Liége, Belgium	1.2	Lisbon, Portugal	6.1
Brussels, Belgium	1.4	Vienna, Austria	6.1
Oslo, Norway	1.9	Budapest, Hungary	6.3
Helsingfors, Finland	1.9	Stockholm, Sweden	6.3
Utrecht, Holland	2.0	Oporto, Portugal	7.0
Amsterdam, Holland	2.1	Leningrad, Russia	7.5
Basle, Switzerland	2.1	Lwow, Poland	7.9
The Hague, Holland	2.3	Warsaw, Poland	8.2
Danzig, Danzig	2.7	Murcia, Spain	9.0
Zurich, Switzerland*	2.9	Dublin, Irish Free State	9.6
Gothenborg, Sweden	3.1	Yaroslav, Russia	12.0
Antwerp, Belgium	3.5	Ufa, Russia	12.4
Riga, Latvia	3.5	Cartagena, Spain	12.8
Vilna, Poland	3.9	Rome, Italy	12.9
Graz, Austria	4.6	Moscow, Russia	19.0
Athens, Greece	4.7		

* Does not include nonresidents.

The cities in France (Table 3) make a particularly good showing in diphtheria death rates, only one having a death rate above 10, and one large city (Toulouse) reporting no deaths from this infection. Paris, where diphtheria seems to have been about the same as in London during the preantitoxin years, had a rate of only 5.4 in 1924, less than half that in New York or London but nearly double that in Berlin.

Of the other European cities (Table 4) Geneva is the only one on the honor roll, with no deaths from diphtheria. For the most part, even in northern Europe, diphtheria death rates in 1924 were very low. It is a little surprising to find that Rome has a higher diptheria mortality than the cities of Holland, Belgium, Norway and Sweden.

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* The data for this article were obtained at the same time as the data for the article on Typhoid in Certain Large Cities of Europe in 1924 (The Journal, December 12, p. 1890), from the health officers of the respective municipalities. All the cities are of a population exceeding 100,000, the estimates being the same as those used in the typhoid tables. Certain cities are not represented in these lists, because of the miscarriage of requests or replies.

[1] Diphtheria Mortality in the Large Cities of the United States in 1924, J. A. M. A. 84: 1269 (April 25) 1925.

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS[*]

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CHICAGO

(Continued from page 117)

GELATIN FILMS

Gelatin films are mixtures of glycerin, gelatin and water in varying proportions, and were introduced by Unna, about 1880. They are used to secure soothing action and protection (while permitting evaporation of sweat), to obtain support, and at times for prolonged medication.

The following two formulas, taken from the National Formulary, will probably be found sufficient for most purposes:

FIRM ZINC GLYCEROGELATIN (N. F.)

	Gm. or Cc.
Zinc oxide	10
Glycerinated gelatin	30
Glycerin	25
Water	35

SOFT ZINC GLYCEROGELATIN (N. F.)

	Gm. or Cc.
Zinc oxide	10
Glycerinated gelatin	20
Glycerin	35
Water	35

The National Formulary also contains salicylic acid glycerogelatin and iodoform glycerogelatin, each of which has 10 per cent of the active ingredient. Like all other official formulas, these preparations may be prescribed merely by giving the official name.

As a general proposition, as soft a film as possible should be applied; but, of course, it must not be liquid at body temperature. For agents that lessen the gelatinizing power of the mixture, such as phenol, resorcinol, salicylic acid, tar or ammonium ichthyolate preparations (from 5 to 10 per cent), the harder jelly should be employed. For insoluble or slightly soluble powders, such as sulphur, iodoform, ammoniated mercury or chrysophanic acid, the softer preparation is used. Substances that precipitate gelatin, such as tannic acid or mercuric chloride, cannot, of course, be applied in this manner.

These films are useful in the treatment of obstinate ulcers or eczema of varicose legs. By means of them one may at one and the same time obtain protection of the lesion and support for the varicose veins. They are also useful for the relief of itching.

The following technic is employed in the treatment of varicose veins:

The jelly is liquefied on the water bath and applied, while still fluid, but not hot, to the affected limb by means of a paint brush. Then a gauze roller bandage is run up the limb; the bandage is not reversed (as is ordinarily done) but is cut in such a way that the surface remains perfectly smooth and even. Then a coat of jelly is applied, and another roller bandage is added; this is continued until the cast is of sufficient thickness. The dressing is best put on in the morning before the patient arises, as the horizontal position has depleted the leg and reduced swelling. Otherwise preliminary use of elevated posture and careful effleurage are required to secure the depletion necessary for best results. The ulcer or eczema is covered as if it did not exist. As soon as a secretion shows through the cast, a window is cut, the lesion is exposed, and it is treated with appropriate dressing as often as is required. The cast itself may remain in place for two weeks or even longer.

PLASTERS

Plasters are adhesive soft masses with a melting point higher than the temperature of the skin. They are generally obtained thinly spread on a support. The formerly official plasters with lead oleate as a base (diachylon plaster) have been so completely replaced by rubber plasters that the new Pharmacopeia recognizes these, even though it does not give a detailed formula for their preparation, as this requires the facilities of a manufacturing establishment.

Adhesive plaster, no doubt the most important of all the plasters, is a mixture of rubber (about 30 per cent) with resins and waxes and a filler of absorbent powder, usually zinc oxid (20 per cent). The face of the plaster is generally covered with muslin or similar material, which must be removed before the plaster is applied. If the plaster is not sufficiently adhesive, the defect can be remedied by warming it slightly. Before applying the plaster, it is well to cleanse the skin, preferably with benzine. If the surface is quite hairy, it should be shaved. The plaster may be left in place as long as the skin tolerates it without discomfort. The time varies greatly with different individuals. It may usually be left on for a week or two, though some very sensitive skins do not tolerate it for more than a day or two. The plaster is most easily removed by loosening its upper edge and pouring a little benzine, ether or volatile oil between it and the skin, at the same time working it loose with the finger. If the skin is very irritable, oil may be used instead, but it acts much more slowly.

To enumerate the uses of adhesive plaster would require a list much beyond the limits of the available space. It has become indispensable in surgery for approximation, immobilization, support, compression and bandaging. Insufficiently appreciated perhaps is its use as an analgesic. It is a self-evident truism that any pain aggravated by motion can be relieved by limiting that movement or making it impossible, and adhesive plaster is frequently the best means of accomplishing this.

Belladonna plaster has the nerve-end benumbing properties of the alkaloids of the atropine series, added to the mechanical analgesic properties of a plaster support. The plaster is usually made porous, so as to permit the evaporation of sweat. This causes it to be borne better by the skin than the adhesive plaster so that it may usually be left in place for a week or two, but it also lessens the adhesive and supporting power. It is probably most efficient in painful conditions accompanied by skin hyperesthesia.

Cantharides plaster is adhesive plaster made vesicating by cantharides, which are commonly called "Spanish flies," though they are neither Spanish nor are they flies, but beetles found in tropical and temperate zones throughout both hemispheres. This is an exceedingly irritative preparation, which, when applied to the skin, first causes a redness and burning; then, usually within eight hours, blistering and pain; and, if kept in contact for a much longer period, deep inflammation and sloughing.

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[*] This is the third of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

The Pharmacopeia describes this plaster as being cantharides cerate spread on adhesive plaster with a margin left around the edges; a cerate differing from a plaster by not being sticky. If this plaster were as sticky as adhesive plaster, the epidermis raised by the blistering would be pulled off when the plaster is removed, which is generally not desired. Manufacturers put on the market and druggists generally dispense a slightly adhesive rubber plaster rendered vesicant by cantharides spread clear across the backing. It is well to oil the face of the plaster before applying it; and, if it is found not sufficiently sticky, to keep it in place by a strip of adhesive plaster. As a rule the application is removed at the end of six or eight hours. If vesication is not complete, a poultice or compress may be applied. In young children, application for from two to four hours usually suffices. It is better to use several plasters, as small as an inch square, close together, than to employ a very large one, as the subsequent dressing is much simpler. The blebs are pricked separately aseptically at their most dependent part, and a dry absorbent dressing is applied, kept in place by a few strips of adhesive plaster. If the raised epidermis has become lost the raw surface must be dressed in accordance with the principles governing the treatment of an ulcer.

Blisters should never be placed over acutely inflamed joints, over very sensitive areas, such as the scrotum or the mammae, or over bony prominences. Cantharis vesication is contraindicated in nephritis; and great care is necessary in ordering blisters in pregnancy, in persons with hemorrhagic tendencies, or in the feeble, the very young or the very old.

The possible indication for blisters is in chronic inflammatory or painful conditions, as in chronic pleurisy, pericarditis, neuralgias and myositis.

Mustard plasters are not really plasters, as they are nonadhesive, being merely papers on which defatted powdered black mustard has been fixed by means of rubber. They are employed by being soaked in warm —not hot—water for about two minutes and being applied to the skin; if the skin is very sensitive, it may be protected by a thin piece of wet cloth between it and the plaster. On a sensitive skin, from five to ten minutes' application may suffice. Generally, mustard plasters are left in place for fifteen minutes: it is not well to leave them much longer, as they may produce a painful, slow-healing blister.

Mustard plasters constitute an admirable form of counterirritation in acute, deep congestion and inflammation; by means of their reapplication whenever the previously produced redness has faded, it is possible to maintain cutaneous hyperemia for any desired length of time.

The mustard poultice has the advantage over the mustard plaster in that it can be prepared at home, and made of any desired size or shape and of such strength as to meet the requirements of the skin on which it is to be used. Thus, for maintaining rubefaction of the chest in children with bronchitis or bronchopneumonia, a piece of cloth or even paper the size of the chest from axilla to axilla may be spread with a dough composed of mustard and flour in varying proportions (as will be noted below) and lukewarm water. The face of the poultice is covered with cheese cloth; and, prior to application of the poultice, the skin is anointed with petrolatum. The poultice may be left in place for from fifteen to thirty minutes; the same poultice may be applied to the back for an equal length of time. Such treatment may be repeated every eight hours. The adult skin tolerates a mixture of mustard and flour in equal parts for the specified length of time without excessive irritation. An infant's skin will probably not bear an application stronger than 1 part of mustard to 3 parts of flour. For successive applications, the strength is varied according to the condition of the skin. If it is still hyperemic, the strength is reduced; if the previous application did not produce sufficient hyperemia, the strength might be increased.

III. LOTIONS OR WASHES

Lotions are aqueous or hydro-alcoholic liquid preparations applied without massage, and intended chiefly for epidermic action. When a lotion is used for immersion of the body or a part of the body, it is spoken of as a bath. When used on gauze or lint or other absorbent material, the application is spoken of as a compress. A lotion for the eyes is popularly known as eye water, or eye drops. A wash for the throat is called a gargle. When a lotion is to be introduced into the passages of the body by means of a syringe, it is spoken of as an injection, when it is intended to remain for awhile; or an irrigation, when outflow balances inflow. A rectal injection is known as an enema, clyster or lavement. Here applications to the skin will be discussed. The others will be taken up in their appropriate places.

In the composition of a skin lotion, a great difference must be recognized according to whether the epidermis is broken or not. Thus, when the epidermis is not damaged, alcohol might be used as a solvent; when the surface is broken, it must be much diluted, as strong alcohol is irritating to raw surfaces. Even water is irritating when the skin is highly inflamed and there is a tendency to vesication. When this is the case, as in acute dermatitis or in fresh burns, water must not be applied unless it has been rendered approximately isotonic by some nonirritative body, such as boric acid or sodium chloride. A small amount of glycerin, say 5 per cent, is frequently added to prevent complete drying of lotions and to keep the surface soft and pliable. Addition of a much larger amount of glycerin must be avoided, as glycerin undiluted is hygroscopic, exerting a drying action on the skin, which might be detrimental and irritating to an inflamed or very sensitive surface. On an extremely irritable surface, even 5 per cent of glycerin may be objectionable.

In prescribing lotions, it must be remembered that it is of great importance to adjust the concentration to the sensitiveness of the surface for which the application is intended, the percentage of active ingredient being equivalent in local applications to dosage in internal medication.

When a large amount of fluid is required, as in baths or in rectal or vaginal injections, the active ingredients are ordered of the druggist, in the form of a powder or of a concentrated solution, to be added by the patient to the specified quantity of water. For a child's bath one usually calculates from 50 to 100 liters; for an adult's, 200 liters.

The subscription in case of lotions would simply be: Mix (abbreviated M.). It is hardly necessary to say "Mix," "Make a solution" or "Prepare a lotion." The druggist knows. The transcription, on the other hand, should be explicit and indicate clearly that the remedy is intended for external use: "Not to be taken," or "For external use only"; if it is to be diluted, to what degree; or dissolved, in what amount of water; and how often it is to be used. When a very poisonous agent enters a lotion, it may be well to have the pharmacist affix a poison label. In such case, it should be explained to the patient that the medicine is poisonous only when swallowed, and that he need not be afraid to apply it to the skin as intended.

As it is of practical advantage to study the composition of lotions as varied in accordance with the effect intended, they are classified here on the basis of their action.

1. *Protective Lotions.*—Insoluble powders are frequently added to lotions for their protective action. Powders are thus prescribed for very irritable inflamed skin, when even the drying action of a dusting powder might be irritating. In general, it is best not to suspend the powder in the fluid by means of acacia or other mucilaginous substances, as in such preparations the powder may on prolonged standing become caked at the bottom of the bottle. Lotions may with advantage be perfumed with rose water. It is sometimes well to impart flesh color, especially to lotions for the face; this may be done by the addition of 1 per cent ferric peroxide. The popularity of calamine lotion is partly due to the fact that calamine (impure zinc carbonate) is almost flesh color. This soothing lotion, so much employed in acute dermatitis, is composed of calamine and zinc oxide, each 8 per cent; glycerin, 2 per cent, with the solution of calcium hydroxide (popularly miscalled lime water[11]) as a vehicle. The formula for it is official in the National Formulary as Calamine Lotion, under which name it may be prescribed.

2. *Emollient Lotions.*—Simple protective lotions, like the calamine lotion, have a drying effect, even when the small amount of glycerin permissible is present. This can be overcome and the lotion made emollient (softening) by the addition of either tragacanth or quince seed mucilage or by incorporating oil with the production of a skin cream.

Skin creams are emulsions for external use, having chiefly an emollient or protective action. As they are not applied with friction and are intended for epidermal action they are really lotions, though they are sometimes called liniments. For the purpose of emulsification, alkalis, particularly the solution of calcium hydroxide (but not ammonia water, because it is irritative) and wool fat are the best agents; wool fat, 1 part, and almond oil, 3 parts, will take up 10 parts of water; wool fat, 1 part, and almond oil, 4 parts, will take up 16 parts of water.

When calamine lotion is found too drying, we may take recourse to the so-called calamine liniment (N. F.), in reality a skin cream, which differs from calamine lotion by the presence of 50 per cent of olive oil, emulsified by the solution of calcium hydroxide.

Lime liniment, also known as carron oil (a term derived from the Carron Iron Works of England, where this preparation first gained popularity in the treatment of burns), which contains equal parts of solution of calcium hydroxide and linseed oil, is also not a liniment—for liniments are applied with friction—but, rather, a lotion. This preparation is used on absorbent dressings as a compress without covering. Though this is a very grateful application to a burn, it has been criticized because, in the first place, it dries into a sticky varnish, which is unsightly as well as difficult to remove; and, secondly, because, being nonantiseptic, it invites infection. The latter objection may be overcome by the addition of an antiseptic, such as thymol (1:2,000); the former, by the substitution of a nondrying oil, such as olive oil, for the linseed oil and by sufficiently frequent reapplication to prevent drying.

As an example of an emollient gum lotion we might cite the formula given by William Allen Pusey for a hand lotion to be used as a detergent, instead of soap, by rubbing it freely over the skin and then wiping it off. It is useful when soap is too irritating, as in cold weather, when less fat than usual is secreted by the skin glands and the skin has a tendency to chap:

		Gm. or Cc.
℞	Oil of rose	0|05
	Oil of lavender	0|10
	Oil of bergamot	0|20
	Tragacanth	5|00
	Boric acid	15|00
	Glycerin	15|00
	Water, to make	1,000|00

3. *Evaporating Lotions.*—The fact that heat is rendered latent by the evaporation of fluid is frequently made use of to obtain cooling effects from the application of a volatile fluid by means of uncovered compresses kept moist. Alcohol, being more volatile, is more efficient than water in its cooling effect. From 20 to 50 per cent alcohol would constitute a typical evaporating lotion. An example of the use of such a lotion is in erysipelas, when diluted alcohol, to which 1 per cent of phenol is added, is found quite comforting to patients, the gauze covering the lesion being kept moist with it.

That cooling applications form the most grateful treatment against the burning pain of burns is self-evident. Such may be obtained by means of compresses or of baths, according to the extent and location of the lesions. For first degree burns of moderate extent, simple cool compresses are best. They are applied, of course, without covering, so as to enlist the aid of evaporation in keeping them cool as long as possible. To avoid the pain that might be occasioned by the frequent changing of the compress required to maintain the desired coolness, it is best to renew merely the outer layers of the compress, leaving the ones next the patient undisturbed. Constant drop by drop irrigation with cool water is a still better method of maintaining the required temperature without disturbing the dressing.

The ice bag is not to be recommended because its weight and low temperature might favor the occurrence of necrosis, which would mean the conversion of a burn of the first or second degree into one of the third degree. For the same reason, real coldness of the compress should be avoided; a degree of coolness should be maintained that is just comfortable to the patient. However, for burns of the second degree, plain water compress treatment is unsuitable, as it favors the formation of large blebs, no doubt by reason of endosmosis. By adding something to the water that will antagonize osmosis into the tissues, these evil effects may be avoided. Thus, a paste of baking soda and water, liberally applied, forms an admirable first aid dressing to a burn. Probably magnesium sulphate solution is still better, as suggested by the striking difference in the results of an experiment of Meltzer:[12] Both ears of deeply anesthetized rabbits were immersed in hot water (65 C.) for three minutes. Immediately afterward the right ear was submerged in a 25 per cent solution of magnesium sulphate and the left ear in a 6 per cent solution of sodium chloride for three hours. Of the ear treated with sodium chloride, one third sloughed away. On the other ear there was only a slight sloughing near the tip. Meltzer also employed magnesium sulphate applications in human beings, and asserts that first and second degree burns are invariably arrested in their development when concentrated solutions of magnesium sulphate are applied early; also that third degree burns run a more favorable course under this treatment. Higher concentrations than 25 per cent seemed to have a still better effect.

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[11] The official waters are aqueous solutions of volatile bodies. Watery solutions of nonvolatile bodies are classified as solutions.

[12] Meltzer, S. J.: Magnesium Sulphate Treatment of Burns, J. Pharmacol. & Exper. Therap. **12**: 211 (Nov.) 1918.

These results cannot be due merely to hypertonicity of the solution, as the 6 per cent solution of sodium chloride was similarly hypertonic. They must, in addition, be the result of the analgesic action of the magnesium ion. That local anesthesia inhibits, at least temporarily, the phenomena of inflammation has been shown again and again.[13]

That the results would be less striking, when infection is present, can be readily understood. The inhibition of the inflammatory reaction might, in such a case, actually be of disadvantage, especially in view of the fact that magnesium sulphate has no bactericidal effect. However, as a fairly concentrated solution of this salt is bacteriostatic, as shown by Northrup,[14] we can see that the continued use of such a solution in the dressing of a fresh burn would also tend to prevent infection. The finding of Northrup that magnesium chloride had quite an inhibitory effect on the growth of microorganisms suggests the desirability of repeating Meltzer's experiments with this salt, with a view to determining whether it is as favorable in a recent burn as magnesium sulphate proved to be.

In this connection, it might be well to emphasize the desirability of keeping such dressings moist, as drying is harmful to the healing of raw surfaces. The opinion is becoming crystallized and has been voiced, among others, by Bier and by Escher[15] that dry absorbent dressings are detrimental to open wounds and granulating surfaces for the following reasons: Dry dressings are themselves irritative foreign bodies; one would, for example, tolerate neither cotton nor gauze in the eye. This irritation results in excessive discharge, exuberant granulations, and infiltration of the wound edges, thus delaying healing. Drying is an enemy not only to bacterial life but also to the growth of tissue, for "all cells live in water and in running water." From the fluid, cells take their nourishment, and into it they discharge their excrement. Drying is a bitter enemy to all life. To overcome the injury done by absorbent dressings, an excessive inflammatory reaction is required. Granulations grow into the meshes of the dressing; and, in this manner and by the sticking caused from dried up secretion, a layer of newly forming tissue is liable to be removed at each change of dressing. Thus we can see that frequent change of such dressings may greatly delay the healing of a raw surface. When we finally think of the pain produced when the dressings are rudely pulled off, as is done so often, and the dread of change of dressing that this inspires in the patient, we certainly have a superabundance of reasons for discarding dry absorbent dressings for raw surfaces, or for not permitting moist dressings to dry. When a dressing sticks, it should first be softened and loosened, best by a solution of hydrogen peroxide, before it is gently removed. It is still more important to prevent the sticking of dressings, which can be done either by keeping the dressings moist or by some form of lipophil film. Perforated paraffin paper[16] or wide-meshed paraffined gauze[17] are among the means available to prevent the sticking of dressings.

It may seem that the good results reported from the recently advocated treatment of burns by exposure of the bare surface to the air, keeping the covers away from it by "cradling" of the bedclothes, directly contradicts the statement just made that drying is detrimental to wound healing. But it does this by no means. The drying, it is true, kills a surface layer of cells: and, at first, provokes a liberal secretion. This discharge on drying forms a crust, underneath which moisture is retained to a sufficient degree to permit cells to grow and multiply. In other words, the so-called open treatment of burns is merely a variety of film treatment. It is the simplest and probably the most useful method of treatment for burns of the face and head.

Of all the medicated moist dressings for burns, the trinitrophenol compress is by far the most popular. There are good reasons for this. Trinitrophenol, or picric acid, is a powerful antiseptic, having a phenol coefficient of 6.[18] A 1 per cent aqueous solution of trinitrophenol, which is practically saturated, is therefore a more powerful disinfectant against typhoid organisms than a saturated (5 per cent) aqueous solution of phenol. Using a different method of comparison—glass rods dipped in cultures and dried—Ehrenfried[19] found it to kill *Staphylococcus pyogenes-aureus* in two minutes, while a 1 per cent solution of phenol required about 100 minutes to kill these organisms. In addition, trinitrophenol has a great affinity for tissues, on which it fixes itself; and, by reason of its protein precipitant qualities, exerts an astringent action. The hardening of the epidermis thus produced antagonizes bleb formation. Over any raw surface present it forms a protective aseptic scab, which seals up opened lymph spaces and prevents the entrance of infection. This scab also covers exposed nerve endings; and this, together with an intrinsic analgesic action possessed by this phenol derivative, relieves pain. The scab also splints the wound surface in such a manner that cell proliferation proceeds beneath it with a minimum waste of material. It is also said that trinitrophenol is strongly keratoplastic—that it promotes the formation of epidermis from the basal cell layers. It has indeed been said—with a certain degree of poetic license—that "with it one can create epidermis at will."

Unfortunately, trinitrophenol has its disadvantages. One of these is the intensely yellow stain it produces; the other, that it is toxic if improperly used. Cases of death from trinitrophenol poisoning are on record, when the chemical was used as an ingredient of a dusting powder, or when its aqueous solution was applied to a very extensive burn. In any case, the possibility of idiosyncrasy against the drug must be borne in mind; and, when headache, vertigo, nausea and vomiting or diarrhea develops, when a papular or erythematous rash appears, when yellow discoloration occurs in conjunctiva and skin, or when the urine becomes dark red, green or port-wine color and shows albumin, the dressing should be promptly removed. To avoid poisoning, third degree burns covering an extensive area should never be treated with trinitrophenol, nor should dusting powder, alcoholic solution or ointment be employed.

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[13] Meyer, A. W.: Ueber den Einfluss der Anasthesie auf den Verlauf von Entzündungen, besonders beim Erysipel, Ztschr. f. Chir. **47**: 974 (Aug. 7) 1920.

[14] Northrup, Zae: The Effect of Concentrated Solutions of Certain Magnesium Salts on Pyogenic and Other Bacteria, J. Infect. Dis. **24**: 170 (Feb.) 1919.

[15] Escher, T.: Zur Reform der Heilung per Secundam Intentionem, Zentralbl. f. Chir. **47**: 970 (Aug. 7) 1920.

[16] Booth, C. C.: Paraffin Paper for Surgical Dressings, J. A. M. A. **71**: 59 (July 6) 1918.

[17] Fisher, H. E.: Nonadhering Surgical Gauze, J. A. M. A. **66**: 939 (March 25) 1916.

[18] Tidy, H. L.: Strength of Picric Acid as Antiseptic, Lancet, Sept. 11, 1915.

[19] Ehrenfried, Albert: Picric Acid and Its Surgical Applications, J. A. M. A. **56**: 412 (Feb. 11) 1911.

Ehrenfried[19] gives the details of the technic of this dressing. Water should be boiled in a flask sufficiently long to insure sterility of the water and of the inside of the flask. While it is still boiling, the estimated quantity of pure trinitrophenol crystals (12 Gm. to the liter) should be added to it, and it should be stopped with absorbent cotton and allowed to cool. Any excess of the acid will settle to the bottom of the flask. The contents will remain sterile indefinitely.

The solution should be applied on gauze.[20] In case of a superficial burn of the hand or foot, the part may be completely immersed in the solution for some minutes, and the gauze dressing then applied, covered with sheet wadding and bandaged. Waxed paper or other material to prevent evaporation and render the dressing occlusive is of no advantage, except to prevent the solution from soaking through and discoloring the bandage. To avoid staining the fingers, the wet gauze may be handled with forceps, or the hands may be protected by rubber gloves or petrolatum. Sometimes it is cleaner to apply the gauze to the part and then to moisten it by pouring the solution on the gauze directly from the bottle. To remove the stain, scrubbing with soap and water immediately after contact ordinarily suffices. Previous soaking in alcohol or ammonia water readily removes all except the faintest traces of yellow discoloration.

Before applying the trinitrophenol dressing to fresh burns of the first and second degree, or to superficial lacerated wounds, no preparation is necessary if the parts are tolerably clean. If the part is dirty, it should be gently washed clean with gauze sponges dipped in soap and water, and then rinsed off with sterile water or a weak antiseptic solution. Any blebs that have formed may be opened aseptically at their most dependent point and the contents expressed. One dressing usually suffices in these cases, unless the lesion is extensive. If a burn has received previous treatment with ointments or carron oil or other emergency application, this should be carefully wiped away, so as not to interfere with the action of the trinitrophenol.

In burns of the first and second degree and in other superficial lesions, the original dressing may be removed after three or four days; the wound will generally be found healed or covered by a flat pliant scab. If the gauze adheres to the scab it should be moistened with trinitrophenol solution to avoid pulling away the scab, which may then be softened with boric ointment and removed, or allowed to remain until it comes off, unless there is a suspicion that pus is imprisoned beneath. If there still remain unhealed portions, the dressing may be renewed or a paraffin film or cerate dressing (to be described later) applied.

(To be continued)

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20 Picric acid impregnated gauze pads are obtainable on the market in sterile packets They require merely moistening with water.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (See THE JOURNAL, May 2, 1925, p. 1338).

E. R. Squibb & Sons, New York.

Scarlet Fever Streptococcus Antitoxin Concentrated—It is prepared by the method of Drs. Dick under U. S patent 1,547,369 (July 28, 1925; expires, 1942) by license of the Scarlet Fever Committee, Inc. The serum is concentrated by the Banzhaf method Each cubic centimeter neutralizes at least 25,000 skin test doses of scarlet fever toxin. Marketed in packages of one syringe containing 6 cc (prophylactic dose) and in packages of one syringe containing 12 cc (therapeutic dose).

SCARLET FEVER IMMUNITY TEST.—The toxin of the hemolytic streptococcus of scarlet fever is used to determine those persons who are susceptible to scarlet fever. The toxin is first carefully standardized on human beings and diluted so that 0.1 cc. represents a skin test dose.

The test dose is injected intracutaneously on the forearm and the degree of susceptibility is determined at the end of from twenty-two to twenty-four hours. An area of reddening 1 cm or more in diameter constitutes some degree of a positive reaction, while a smaller area of reddening is considered negative. Reactions which have appeared but which have entirely faded at the end of twenty-four hours are regarded as negative. Positive reactions fade rapidly and have usually disappeared at the end of from forty-eight to seventy-two hours.

Scarlet fever streptococcus toxin diluted for use will retain its potency for at least two months at room temperature.

The toxin is used also for active immunization. For this purpose it is injected subcutaneously at weekly intervals The amount of toxin necessary for immunity production varies with the individual. From three to five doses are given, beginning with 250 to 500 skin test doses for the first injection and increasing the amount of toxin in each subsequent injection. Immunity to the toxin appears in a few weeks and is determined by the reaction to the intracutaneous test.

E R. Squibb & Sons, New York

Scarlet Fever Streptococcus Toxin for Dick Test Squibb—Prepared by the method of Drs Dick under U. S patent 1,547,369 (July 28, 1925; expires 1942) by license of the Scarlet Fever Committee, Inc. Marketed in packages of one vial containing sufficient toxin for ten tests, in packages of one vial containing sufficient toxin for 100 tests

Scarlet Fever Streptococcus Toxin Squibb—Prepared by the method of Drs Dick under U. S patent 1,547,369 (July 28, 1925; expires 1942) by license of the Scarlet Fever Committee, Inc Marketed in packages of five vials of toxin containing, respectively, 500, 1,500, 5,000, 15,000 and 20,000 skin test doses, in packages of fifty vials of toxin, ten containing 500 skin test doses, ten containing 1,500 skin test doses, ten containing 5,000 skin test doses, ten containing 15,000 skin test doses, and ten containing 20,000 skin test doses

SULPHARSPHENAMINE (See New and Nonofficial Remedies, 1925, p 55).

Sulpharsphenamine-Mallinckrodt.—A brand of sulpharsphenamine-N N R.

Manufactured by the Mallinckrodt Chemical Works, St Louis, under U S patent 1,024,993 (April 30, 1912; expires 1929) by license from The Chemical Foundation, Inc.

Sulpharsphenamine Mallinckrodt, 0.1 Gm. Ampules.
Sulpharsphenamine Mallinckrodt, 0.2 Gm Ampules.
Sulpharsphenamine Mallinckrodt, 0.3 Gm Ampules.
Sulpharsphenamine Mallinckrodt, 0.4 Gm Ampules.
Sulpharsphenamine Mallinckrodt, 0.5 Gm Ampules
Sulpharsphenamine Mallinckrodt, 0.6 Gm Ampules.

Effect of Environmental Temperature on Organism.—During an exposure of six hours to an environmental temperature of 20 or 30 C. there was a drop in body temperature, probably due to a decrease in muscular activity. At 40 degrees there was an increase of one degree in body temperature without an initial drop At 45 degrees and at 50 degrees the body temperature rose within an hour to such a height that it was deemed unsafe to continue the experiments.—Flinn, F. B.: *Pub Health Rep.* 40:888 (May 1) 1925.

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SATURDAY, JANUARY 16, 1926

LABORATORY AID IN WHOOPING COUGH

So-called laboratory diagnosis has to some extent at least been recently subjected to extremely critical evaluation. One sometimes hears whispers of dissatisfaction with its accomplishments or the rumblings of opposition to its claims. We are reminded that the vaunted "laboratory aids" often do no more than furnish a verification of that which the well trained bedside clinician can discover through the peculiar technic or devices that are characteristically his own. Consequently the clinical chemist is now and then put into the position of a defender of his activities. It should be borne in mind, however, as Morse[1] has recently expressed it, that for him who aims to utilize chemistry in the study of the human being in health and in disease, chemistry is a means to an end and not an end in itself. Chemistry may become the tool for the investigation of the structure and functions of the body, just as physics affords the instrument by means of which the physiologist determines the flow of blood and the movement of the muscles.

A highly illustrative instance of the help that modern biochemical methods can afford is furnished by the recently reported observations of Powers[2] of the Yale School of Medicine on the convulsions that frequently complicate whooping cough in children. The symptoms have variously been ascribed to cerebral hemorrhage, encephalitis or other lesions, as well as to some vague "toxin." Opinion has differed as to whether the convulsions have an anatomic basis. It is true that a possible etiologic relation of tetany to them has also been proposed; but it remained for Powers to apply laboratory methods in securing the correct answer. His reports indicating the frequent occurrence of a lowered content of calcium in the blood and of an electrical hyperirritability of the nerves point to the identity of the convulsions with tetany. They also indicate the therapeutic procedures that are urgently called for in a complication of whooping cough that is always grave and often ends fatally.

Thus, Powers contends that the calcium concentration of the blood and that the electrical reactions of all infants with whooping cough should be determined, if possible, and therapeusis guided by the evidence for or against the existence of latent tetany. In the event that these determinations cannot be made, calcium chlorid should be administered to young children who have whooping cough complicated by convulsions, even if there is no clinical evidence of tetany and rickets; exception to this procedure might be made, of course, in those patients with proved cerebral lesions Furthermore, Powers adds, it would seem highly advisable, regardless of clinical signs or of laboratory data, to treat all infants suffering from whooping cough with cod liver oil or radiant energy or both. Even when uncomplicated, the infection is often severe, and the therapeutic measures just mentioned will not only prevent and cure rickets on which infantile tetany is usually, if not always, engrafted, but also promote general physical welfare more effectively than any so-called tonic remedies.

A few instances of such helpful aid furnished by specialized procedures in the direction of preventive therapy, as well as for curative purposes, suffice to offset myriads of objections to chemical laboratory diagnostic ventures.

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[1] Morse, W.: Applied Biochemistry, Philadelphia, W. B. Saunders Company, 1925.

[2] Powers, G. F.: Tetany as a Cause of Convulsions in Whooping Cough, Am. J. Dis. Child. 30:632 (Nov.) 1925.

THE RÔLE OF INSULIN IN CARBOHYDRATE METABOLISM

Ever since the metabolic fate of carbohydrates in the body has become associated with the function of insulin, biochemists have been concerned with the question as to how the pancreatic hormone affects glucose so as to render it utilizable. Macleod[1] early realized that the very rapid fall in blood sugar that sets in almost immediately after injection of insulin suggests that some process occurring in the blood itself must be responsible for it—an increased glycolysis. There is widespread agreement among investigators, however, that insulin does not directly influence the rate of glycolysis or sugar decomposition.

A second explanation, which also was suggested early in the investigation of insulin, involves the possibility that it might have some influence on the properties of sugars so as to render them more labile in metabolism. The stereochemical character of glucose lends tenability to such an hypothesis. Several investigators, in fact, believed that they had demonstrated the occurrence in the body of varieties of glucose of varying stability; thus the discussions of the alpha, beta and gamma types of glucose were initiated. Differences were alleged to occur in the blood of healthy and of diabetic persons. But the various claims that insulin does something to cause the conversion of a stable (oxidic) sugar to a labile (aldehydic) one were apparently invalidated.[2]

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[1] Macleod, J. J. R.: Insulin, Physiol. Rev. 4:21 (Jan.) 1924.

The idea that insulin, acting perhaps with some other agency in the tissues, may cause a change in the glucose molecule so as to render it more susceptible to oxidation has persisted despite the adverse reports. Lundsgaard and Holbøll[3] of the University of Copenhagen noted that a glucose solution with well defined optical properties always shows a lower rotatory power after the addition of insulin and fresh muscle tissue than that indicated by its reduction value.[4] The details of such studies are too complex to be reported here, but the report shows that under the conditions cited a transformation of part of the glucose into a new, heretofore unrecognized, form of glucose takes place.[5] The physiologic importance of this is emphasized by the further discovery[6] that the new glucose can always be detected in the blood of normal persons while fasting and also after taking glucose. The observations support the view that the new glucose is the first link in the chain of the transformation of glucose in normal carbohydrate metabolism. This conclusion was further supported by the fact[7] that, in patients with severe or moderately severe diabetes mellitus, new glucose could not be detected in the blood. This substance, however, was found in patients at the conclusion of the treatment. The presumably reactive sugar has also been demonstrated in spinal fluid, edema fluid and pleural fluid from patients with normal carbohydrate metabolism.[8] The Danish biochemists have accordingly set up a new hypothesis according to which insulin exerts its action in the organism in conjunction with a substance always or usually present in the muscles, by transforming α, β-glucose into new-glucose, which can then be further broken down in the organism. This theory, which presents some promising features, will require a careful investigation. Meanwhile we must bear in mind that a chain is no stronger than its weakest link. It remains to be seen whether the newest link will withstand the vigorous tests that it is sure to receive from critical students.

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[2] Winter, L B, and Smith, W: J Physiol **58**: 100, 1922. Hewitt, J A, and Pryde, J.. Biochem. J. **14**: 395, 1920 Van Creveld, S Biochem J. **17**: 860, 1923 Visscher, M B Am J Physiol **68**: 135, 1924 Denis, W., and Hume, H. V.: J. Biol Chem. **60**: 603 (July) 1924; **59**: 457 (March) 1924

[3] Lundsgaard, C, and Holbøll, S A: Effect of Insulin and Muscle *Tissue on Glucose in Vitro, J. Biol. Chem* **62**: *453 (Dec) 1924*

[4] As determined by its action on potassium ferric cyanid, according to the method of Hagedorn and Jensen Biochem Ztschr **135**: 46, 1923, Chem Zentralbl. **4**: 354, 1923

[5] Lundsgaard, C, and Holbøll, S A: Studies in Carbohydrate Metabolism, II, Investigations into the Mutarotation of β Glucose under Various Conditions, J. Biol. Chem **65**: 305 (Sept) 1925

[6] Lundsgaard, C, and Holbøll, S A· Studies in Carbohydrate Metabolism, III, Investigations into the Nature of the Glucose in the Blood of Normal Individuals, J Biol Chem **65**: 323 (Sept) 1925

[7] Lundsgaard, C, and Holbøll, S. A· Studies in Carbohydrate Metabolism, IV, Investigations into the Nature of the Glucose in the Blood of Patients with Diabetes Mellitus and of Patients with Benign Glycosuria, J Biol. Chem **65**: 343 (Sept) 1925.

[8] Lundsgaard, C, and Holbøll, S A. Studies in Carbohydrate Metabolism, V, Investigations into the Form of Glucose in Different Body Fluids, J. Biol Chem. **65**: 363 (Sept) 1925

THE GLOMERULAR CIRCULATION OF THE KIDNEY

It is estimated that the human kidney contains two million glomeruli, or urine-forming units. For each of these there is a tubule. Richards[1] commented, in a lecture before the Harvey Society in 1921, on the tacit assumption in the great bulk of writing on kidney function that the circulation through all these units is at least roughly uniform, and that they take equal part in the sum of activities which make up the total function of the whole organ. He pointed out, on the other hand, that as early as 1859 Hermann noted that the two kidneys may eliminate different amounts of urine, and he stated that it was simplest to assume that not all parts of the kidney act to the same degree all the time, and that one part of the excreting surface may rest or be active, while another part is in reserve.

Such a conception has been made easier of acceptance through the recent observations on the functions of the capillaries in general. There is reason now to believe that their tone is not entirely dependent on blood pressure. The capillaries and venules can themselves respond to both chemical and nervous influences that mediate changes in their caliber. Peripheral vascular beds may thus be expanded or restricted in a most surprising manner. It is the merit of the Danish physiologist Krogh to have shown that in a muscle at rest many capillary channels are occluded, whereas during activity the number of potent capillaries is enormously increased.

Analogously, Richards and his co-workers[2] have found that instead of a uniform circulation of blood through all the glomeruli, varying with general and renal blood pressure, there may be a circulation restricted under conditions of moderate blood flow to only a fraction of the glomeruli. Thus not all of the latter receive blood, and therefore function, at any time. Under certain conditions the fraction of the total existing number of glomeruli taking part in the function of the whole kidney may vary within wide limits. These conditions relate to volume or composition of the blood or to the nervous control of the renal vessels, and they evidently can bring about extensive variations in the filtration surface of the secretory mechanism. By a beautiful technic these phenomena of varying "openness" of the glomeruli can be observed directly in the exposed kidney of certain species; in others, indirect *microscopic* procedures have furnished corroborative results. As a rule the number of open glomeruli, the kidney volume, renal blood flow, and urine elimination vary in the same direction. Caffein and salt solution, used as typical renal vasodilators, cause the number of open glomeruli to increase, while vasoconstricting agents tend to reduce the number of these urine-forming units open to the circulation. We are thus furnished with a new conception of how renal function is altered by changes in the extent of glomerular surface to which the blood has access. The successive obliteration and restitution of some of the glomerular filters exemplify in an unexpected way how the physiologic factors of safety, as Meltzer termed them, may operate in kidney function.

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[1] Richards, A. N.: Kidney Function, Harvey Lectures, 1920 1921, Philadelphia, J. B Lippincott Company, p 177.

[2] Richards, A N, and Schmidt, C. F Am J. Physiol **71**: 178 (Dec.) 1924 Hayman, J. M., Jr, and Starr, I, Jr.: Experiments on the Glomerular Distribution of Blood in the Mammalian Kidney, J. Exper. Med **42**: 641 (Nov) 1925.

Current Comment

ANOTHER COLORED SLIP IN THIS ISSUE

The colored remittance slip inclosed in the issue of The Journal for December 12 met with a hearty response from Fellows and subscribers. Thousands of these slips have been returned to Association headquarters with payment for 1926 Fellowship and subscription dues—this, in spite of the fact that there may have been holiday distractions. For the convenience of those who have not yet remitted for their 1926 dues, slips are again inserted, in this issue. To place this slip only in the copies of those who have not paid would hopelessly complicate the mailing of the issue. Therefore, every copy carries the slip; those who have paid may disregard the slip. A 100 per cent response from the 90,000 Fellows and subscribers will save the Association thousands of dollars in postage and billing expense.

A SAVING WAGE FOR HEALTH OFFICERS

Some of the best work in medicine has been done by specialists in the public health field. The services have not, however, commanded salaries which would encourage high grade physicians and technical experts to remain long in them. If young men are to look on the public health service as a career, they must have confidence that old age will not find them indigent. Although a bill has been introduced to improve the condition of physicians in the Veterans' Bureau, at present, practically the best that the civil service has to offer is: "Positions of physician and medical examiner, for full-time duty: intern (junior medical officer register), $1,200 a year with quarters, subsistence and laundry. Associate medical officer, salary range $3,300 to $3,900, entrance salary $3,300. Medical officer, salary range $3,800 to $5,000, entrance salary $3,800. Senior medical officer, salary range $5,200 to $6,000, entrance salary, $5,200."[1] The average salary, of course, would be far below that offered in the senior grades. The present unsatisfactory state of the pay scale obtains not only in national but also in state and municipal positions; not only in the United States, but also in England. The article by Nicoll,[2] recently published in The Journal, has excited comment in an English periodical, "the *Medical Officer,* a Journal for Medical Men in the Government and Municipal Services."[3] Although gratified that Dr. Nicoll believes the United States has much to learn from England in regard to pay, tenure of office and dignity of the position of health officer, the British periodical shows the following unsatisfactory conditions in its home country: "For thirty-two highly qualified assistant medical officers, the average salary was £635 per annum, and this not for young practitioners, for seventeen of them had more than fifteen years' experience, and the average for the whole was ten years since qualifying. This is the case in what is by no means one of our worst paid health departments, and it is safe to say that we have in this country at least 1,500 whole-time health officers who are receiving not more than £600 per annum." The *Medical Officer* continues with remedial suggestions. First, support of the profession as a whole is necessary, backed, in England, by the Society of Medical Officers of Health and the British Medical Association; in the United States, by the American Public Health Association and the American Medical Association. Second, private practitioners should enter into the movement, for their own interest if for no other reason, because, as the author points out, "We are quite sure that the whole profession will suffer sooner or later if it is realized that the whole-time services of many hundreds of highly qualified and experienced practitioners are obtainable by the public at £600 per annum." The health officer should not be supported in luxury, as Dr. Nicoll says, but he should be able to maintain himself and family in reasonable comfort and to have something left for his dependents if illness or death should end his work.

DIPHTHERIA IN EUROPEAN CITIES

The special article on diphtheria death rates in large European cities, which is printed in another part of this issue,[4] emphasizes the great improvement that has taken place throughout the civilized world since the introduction of antitoxin treatment. At the same time it is evident that the decline has not been uniform in all countries. In the United States, diphtheria death rates in the years preceding the introduction of antitoxin were considerably higher than those in Great Britain for the corresponding period. A much larger proportional reduction in the diphtheria death rate seems to have occurred in the United States than in Great Britain in recent years. A comparison of Germany and Great Britain shows a similar relation: the 1924 rates were proportionately much lower in the German than in the British cities, while during the decade 1880-1890 the reverse was true. It is remarkable that three European cities—Southend, England; Toulouse, France, and Geneva, Switzerland—reported not a single death from diphtheria for the year 1924. Another point worth noting is that the

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[1] Announcement of United States Civil Service Examinations, as reprinted in Journal of Iowa State Medical Society **15**: 665 (Dec.) 1925.

[2] Nicoll, Matthias: Some Problems in Public Health Administration, J. A. M. A. **85**: 1527 (Nov. 14) 1925.

[3] Health Salaries at Home and Abroad, notes and comments, M. Officer **34**: 248 (Dec. 5) 1925.

[4] Diphtheria in Certain Large Cities of Europe in 1924, this issue, p. 194.

Scottish cities Edinburgh, Dundee and Glasgow, which had relatively low rates from typhoid, had relatively high rates from diphtheria. This corresponds to the general prevalence of these two diseases in the United States.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Preliminary Program of Meetings to Be Held in Chicago in February

The next Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals will be held in the Gold Room of the Congress Hotel, Chicago, February 15, 16, 17 and 18.

Council on Medical Education and Hospitals

On Monday and Tuesday, February 15 and 16, the Council on Medical Education and Hospitals of the American Medical Association will hold its twenty-first annual conference. The preliminary program is as follows:

Monday, February 15

Opening Remarks by the Chairman. Arthur Dean Bevan, M.D., professor of surgery, Rush Medical College, Chicago.

Cooperation in Educational Progress. Charles R. Mann, Ph.D., director, American Council on Education, Washington, D. C.

The University's Function in Medicine. Henry M. Tory, LL.D., president, University of Alberta, Edmonton, Alta.

The Program of Medical Education and Its Reactions. Albert B. Dinwiddie, LL.D., president, Tulane University, New Orleans.

Problems in Medical Education. A. Stanley Mackenzie, Ph.D., president, Dalhousie University, Halifax, N. S.

Experiments in Modifying the Medical Curriculum. Henry S. Houghton, M.D., director, Peking Union Medical College, Peking, China.

Hindrances to the University Action in Medical Education from the University Standpoint. Walter A. Jessup, Ph.D., president, State University of Iowa, Iowa City.

Discussion opened by Samuel P. Capen, LL.D., chancellor, University of Buffalo; David Kinley, Ph.D., president, University of Illinois, Urbana.

Tuesday, February 16

Saving Time in Education.

(*a*) In High School and College. Charles H. Judd, Ph.D., professor and head of the department of education, University of Chicago.

(*b*) In the Medical School by Shorter Vacations, Quarter System, or Other Methods. Ray Lyman Wilbur, M.D., president, Stanford University, Stanford University, Calif.

Graduate Medical Education.

(*a*) The University Graduate Medical School and Medical Science. Guy Stanton Ford, Ph.D., dean, University of Minnesota Graduate School, Minneapolis.

(*b*) Postgraduate Assemblies. William B. Peck, M.D., secretary, Interstate Postgraduate Medical Association of North America, Freeport, Ill.

(*c*) University Extension Work. John Sundwall, M.D., head of the department of hygiene and public health, University of Michigan, Ann Arbor.

The Importance of Research in Educational Institutions. John M. Dodson, M.D., executive secretary, Bureau of Health and Public Instruction, American Medical Association, Chicago.

An Internship as a Part of Medical Education.

(*a*) Selection of a Hospital for Intern Training. Henry A. Christian, M.D., Hersey professor of the theory and practice of physic, Harvard Medical School, Boston.

(*b*) Purpose of the Hospital Internship. Ernest E. Irons, M.D., dean, Rush Medical College, Chicago.

Discussion by the chairmen of the fifth year committees.

Federation of State Medical Boards

Wednesday, February 17, the Federation of State Medical Boards of the United States will hold its annual session. The preliminary program is as follows:

Wednesday, February 17

Ten Years of Examination Results. John S. Rodman, M.D., secretary, National Board of Medical Examiners, Philadelphia.

Admission of Foreign Medical Graduates to Licensure Examination. Guy L. Connor, M.D., secretary, Michigan Board of Registration in Medicine, Detroit.

State Board of Examiners in the Basic Sciences. Michael F. Guyer, Ph.D., secretary, Board of Examiners in the Basic Sciences, Madison, Wis.

The New Commission on Medical Education (Its Objects and Relation to Medical Licensure). Willard C. Rappleye, M.D., director of study, Commission on Medical Education, New Haven, Conn.

New State Board of Healing Arts of Connecticut. Robert L. Rowley, M.D., secretary, Medical Examining Board, Hartford, Conn.

Evidences of Impersonation and the Issuing of Fraudulent Diplomas. Frederick C. Waite, Ph.D., professor of histology, Western Reserve University School of Medicine, Cleveland.

Revocation of License. K. P. B. Bonner, M.D., secretary, North Carolina Board of Medical Examiners, Morehead City, N. C.

Annual Registration of Physicians. Don M. Griswold, M.D., commissioner of health of Iowa, Des Moines.

American Conference on Hospital Service

Thursday morning, February 18, the annual session of the American Conference on Hospital Service will be held. The preliminary program is as follows:

Thursday, February 18

Individual Versus Group Responsibility for the Care of the Hospital Patient.

(*a*) Henry A. Christian, M.D., Hersey professor of the Theory and Practice of Physic, Harvard Medical School; physician in chief, Peter Bent Brigham Hospital, Boston.

(*b*) Hugh Auchincloss, M.D., associate professor of surgery, Columbia University College of Physicians and Surgeons; visiting surgeon, Presbyterian Hospital, New York.

The Adaptation of Medical Education to Changing Clinical Practice.

(*a*) Louis B. Wilson, M.D., director, Mayo Foundation for Medical Research, Rochester, Minn.

(*b*) Allen O. Whipple, M.D., professor of surgery, Columbia University College of Physicians and Surgeons, New York.

Discussion opened by Willard C. Rappleye, M.D., director of study, Commission on Medical Education, New Haven, Conn. Christopher G. Parnall, medical director, Rochester General Hospital, Rochester, N. Y.

THE DALLAS SESSION.

Local Committee of Arrangements

The Local Committee of Arrangements, its Advisory Council and the chairman of its subcommittees are: Local Committee of Arrangements: Edward H. Cary, Medical Arts Building, Dallas, chairman; W. W. Fowler, Dallas, secretary, and W. D. Jones, Dallas, treasurer.

Advisory Council: Charles M. Rosser, A. B. Small, John O. McReynolds, J. S. Calhoun, W. W. Samuell, F. A. Pierce, C. M. Grigsby and R. W. Baird, Dallas; William Keiller and J. E. Thompson, Galveston; M. L. Graves and R. W. Knox, Houston; J. H. Burleson and W. B. Russ, San Antonio, and Holman Taylor and I. C. Chase, Fort Worth.

The chairmen of subcommittees, all of whom reside in Dallas, are: Sections and Section Work, H. Leslie Moore; Registration, H. M. Doolittle; Technical Exhibits, R. B. Giles; Scientific Exhibit, George T. Caldwell; Entertainments, John H. Dean; Hotels, M. P. Stone; Printing, George L. Carlisle; Finance, A. I. Folsom; Diagnostic Clinic, J. M. Martin; Halls and Meeting Places, C. C. Nash; Reception, Elbert Dunlap; Alumni and Fraternal Entertainment, G. C. Kindley; Programs, Rice Jackson; Information, W. W. Shortal; Telegraph and Telephone, T. C. Gilbert; Badges, A. R. Thomasson; Women Physicians, Minnie L. Maffett; Golf, Leland Ellis; Local Transportation, W. Lee Hudson, and First Aid, M. E. Lott.

SCIENTIFIC EXHIBIT

Special Exhibits on Immunology and on Morbid Anatomy

The Committee on Scientific Exhibit of the Board of Trustees, on recommendation of its Advisory Committee, has authorized two special exhibits for the Dallas Session. The Exhibit on Immunology is being planned by Dr. H. Wahl, professor of pathology and acting dean of the Medical College, University of Kansas, and Dr. Ludvig Hektoen, director of the John McCormick Institute for Infectious Diseases. Dr. Wahl will have active charge of the exhibit and Dr. Hektoen will act in behalf of the Advisory Committee. Various individuals and organizations will also cooperate in supplying material; the United States Public Health Service is arranging for a coordinating exhibit on vaccination. The subjects included in the Immunologic Exhibit will be Tuberculins, Vaccination, Dick and Schick reactions, Serums and Vaccines, Precipitin Reactions, Allergy, Natural Immunity, etc. Owing to the large scope of the subject, a two year program has been authorized, some subjects not mentioned here being deferred until next year's exhibit.

Another attractive feature will be the Morbid Anatomy Exhibit, under the direction of Dr. George T. Caldwell, professor of pathology of Baylor University Medical School. Fresh pathologic material will be shipped daily from the hospitals in the larger cities of Texas, supplemented by material from Dallas. It will be recalled that similar exhibits have been held at the two previous sessions and have created such interest that the subject seemed well worth presenting again, particularly as it will afford visiting physicians an opportunity to become acquainted with pathologic conditions encountered in Texas.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Society News.—Dr. Henry Thibault, Scott, will address the Pulaski County Medical Society at Little Rock, January 25, on "The Use of Intravenous Antiseptics in the Treatment of Septicemia."

Parking Ordinance Invalid.—The ordinance granting special parking privileges to physicians in Little Rock has been declared invalid by the circuit court in a decision in the case of a chiropractor who also claimed exemption, according to the *Pulaski County Medical Society Bulletin;* following his arrest and fine for parking overtime, the chiropractor appealed to a higher court, which held the ordinance invalid.

CALIFORNIA

Society News.—Dr. Leonard W. Ely, professor of orthopedic surgery, Stanford University Medical School, San Francisco, will address the Los Angeles County Medical Association, January 21, on "Bone and Joint Work at the Stanford Medical School."

Mrs. Fritz Fined.—Mrs. Rose Fritz, San Francisco, was fined $600, Nov. 17, 1925, by Judge Louderback for violating the state medical practice act, it is reported. More than a year ago, Mrs. Fritz is said to have been fined $500 for practicing medicine without a license, and later was acquitted on another similar charge.

Chinese Herbalist Jailed.—T. Wah Hing, a Chinese herbalist of Sacramento, was convicted by a jury, Nov. 10, 1925, of practicing medicine without a license, it is reported, and was sentenced to serve three months in the county jail and to pay a $600 fine. The evidence in the case was secured by representatives of the state board of medical examiners.

Proposed Rat-Proofing Ordinances.—The Building and Safety Commission of Los Angeles refused, Dec. 21, 1925, it is reported, to consider ordinances submitted by the health department for the rat-proofing of buildings, and called on the city council to divest the health department of authority to order alterations on buildings. Recently, the rodent-control authorities, under the direction of Dr. Rupert Blue, U. S. Public Health Service, submitted ordinances which would require that many buildings be rat-proofed by means of concrete foundations, which would have cost, it is said, more than $30,000,000; these proposals were withdrawn following a public hearing in council chambers, and a modified ordinance submitted. The Building and Safety Commission considers that the emergency that existed when building powers were conferred on the health department has passed.

CONNECTICUT

Superintendent Appointed.—Mr. Albert W. Buck has been appointed superintendent of the New Haven Hospital, New Haven, to succeed Dr. Willard C. Rappleye, who resigned to become secretary of the Commission on Medical Education, established under the auspices of the Association of American Medical Colleges. Mr. Buck was formerly connected with the New York Health Department and the American Red Cross, and in June, 1924, was appointed acting superintendent at Johns Hopkins Hospital, Baltimore.

GEORGIA

Impostor Imprisoned.—W. W. Baird, who, while posing as a physician at Cassville, is said to have robbed the bank of $1,100, pleaded guilty at Cartersville, recently, and was sentenced to serve from ten to fifteen years in prison; he is said to have begun serving the sentence, January 2. Baird came to the village of Cassville "seeking" a location to "practice," and obtained lodging at the home of the cashier of the bank. The funds and Baird are said to have disappeared simultaneously. He was located in Canada and returned to Cartersville for trial.

ILLINOIS

Chiropractor Fined.—H. E. Munkvold, Tuscola, a chiropractor, was fined $100 and costs in December, 1925, it is reported, for violation of the state medical practice act.

Personal.—Dr. Henry C. Mitchell, since 1910 chief surgeon of the St. Louis Division of the Illinois Central Railroad, retired from that position and from the practice of medicine, January 1.

Diphtheria Immunization at Nebo.—The superintendent of schools at the village of Nebo reported to the state department of health that 177 of the 192 pupils in that community have been immunized against diphtheria with toxin-antitoxin. This is the best record, the health department says, in the state in point of completeness.

Outbreaks of Smallpox.—Elgin reported an outbreak of twelve cases of smallpox last week, distributed throughout that city with many contacts; an equal number of cases was reported from Broadwell, Logan County, the previous week, which, with sporadic cases from other places, brings the total number reported for the first ten days of this year up to sixty, twice the number reported in the first ten days of last year.

Tuberculosis Sanatoriums.—There are thirty-one tuberculosis sanatoriums in the state, including some which will be opened within the next few weeks. Their combined capacity is 3,542 beds; fifteen of them are operated by counties, eight by municipalities and eight by private organization. Forty-eight counties collect taxes under the Galkin sanatorium law, but only fifteen have built sanatoriums. The gross annual cost of operating the thirty-one institutions is estimated by the state department of health at about $3,500,000.

Chicago

Dr. Wilbur Will Address Association of Commerce.—Dr. Ray Lyman Wilbur, president of Stanford University and formerly President of the American Medical Association, will address the Chicago Association of Commerce at a luncheon, February 17, at the Hotel La Salle on "Health, a Business Asset." Reservations for physicians should be made with the Chicago Medical Society, 25 East Washington Street. Tickets, $1 per person.

Pasteurizing Plants Closed.—In the campaign for pure milk for Chicago, the health commissioner, Dr. Herman N. Bundesen, closed two pasteurizing plants, January 9, which were alleged to be careless in pasteurizing milk; they were the Ogden Dairy Company, 4341 Ogden Avenue, and a plant owned by Stanley Ogurkiewicz, 119 East One Hundred and Twentieth Street. Policemen were stationed at the buildings to enforce the order until assurances are given that more care will be used; twenty-three farmers have also been barred from furnishing milk to Chicago. Dr. Bundesen's plan is to have all milk coming into the city after April 1 come from cows that are free from tuberculosis.

Society News.—Dr. William J. Mayo, Rochester, Minn., will address the Chicago Medical Society, January 20, at the Marshall Field annex building on "Surgery of Gallbladder Disease"; Dr. William H. Stewart, New York, on "Clinical Cholecystography," and Dr. Joseph L. Miller on "Medical Aspects of Gallbladder Disease."——The Chicago Tuberculosis Society met, January 14, at the Edward Hines, Jr., Hospital (Speedway), Roosevelt Road near Maywood. There was an inspection of the hospital beginning at 4:30; roentgen-ray demonstrations at 5:30, dinner at 6:15, and a symposium by the staff of the hospital at 7:30.——Dr. Henry K. Dunham, Cincinnati, will address the Chicago Roentgen Ray Society, January 21, at the Virginia Hotel on "X-Ray Plate as a Guide in the Treatment of Tuberculosis," and Dr. James S. Pritchard, Battle Creek, Mich., on "The Significance of Cough." Among others, Dr. James C. Sargent, Milwaukee, will report a case of "Congenital Bilateral Megalo-Ureteronephrosis Associated with Gaping Ureteral Orifices After Four Years of Permanent Suprapubic Drainage."

Liquor Licenses Revoked.—The prohibition administrator, Mr. E. C. Yellowley, announced, January 4, that the liquor licenses of the following physicians and druggists had been revoked:

PHYSICIANS

Dr. Horace B. Frost, 30 North Michigan Avenue.
Dr. William C. Spangenberg, 1032 Diversey Parkway.
Dr. Roy W. Klaus, 6975 Greenview Avenue.
Dr. Lester E. Garrison, 30 North Michigan Avenue.
Dr. Ethel B. Perry, 677½ Wrightwood Avenue.
Dr. Charles H. Long, 30 North Michigan Avenue.
Dr. Milton L. Smith, 17 North State Street.
Dr. Henry Steible, 6923 Wayne Avenue.
Dr. Cornelius A. Leenheer, 30 North Michigan Avenue.
Dr. Carl Ireneus, 30 North Michigan Avenue.

DRUGGISTS

Leroy S. Kussy, proprietor of the Casino Pharmacy, 933 Grace Street.
Charles Marshack, 1400 Blue Island Avenue.
Arthur H. Stephan Drug Company, 2754 North Clark Street.
Henry Maloney, 5400 South Halsted Street.
James A. O'Brien, 4658 South Ashland Avenue.
C. A. Graves, 300 South Cicero Avenue.

KENTUCKY

Illegal Practitioner Convicted.—Nicholas J. Goergen, a nongraduate and unlicensed practitioner of Newport, was recently convicted for violating the medical practice act, and was sentenced to pay a fine of $350 and to serve sixty days in jail. Goergen, according to the state board of health, which secured the conviction, represented himself as an roentgen-ray specialist, and in that capacity had seriously injured some patients.

LOUISIANA

Hospital News.—The Touro Infirmary, New Orleans, has established prenatal classes of instruction in the outpatient department.

Society News.—Dr. Walter B. Hunter, Coushatta, has been elected president of the Fourth District Medical Society.——Dr. Alfred P. Crain has been elected president of the Shreveport Medical Society.

Whisky Prescriptions Increase.—According to the *New Orleans Medical and Surgical Journal*, physicians of Louisiana wrote 194,786 whisky prescriptions in 1924, 158,685 in 1923, and 96,049 in 1922. The 1925 records apparently are not yet available.

MAINE

Personal.—Governor Brewster nominated Dr. Harrison J. Hunt, Bangor, medical examiner of Penobscot County, Dec. 3, 1925.

MARYLAND

Personal.—Drs. Charles A. Cahn and Nicholas W. Pinto have been appointed health officers in the Baltimore City Health Department by Commissioner Charles Hampson Jones. Dr. Pinto succeeds Dr. Joseph W. Martindale, resigned, and Dr. Cahn takes the place of Dr. John W. V. Clift, who has been transferred to another health district.

Society News.—At the meeting of the Baltimore City Medical Society, held at the Faculty Building, January 8, Dr. Theodore H. Morrison and Dr. Maurice Feldman gave an illustrated demonstration of visualization of the gallbladder by the oral method according to Graham's technic. Dr. Robert E. Fricke addressed the members on "Radiation Therapy of Carcinoma of the Cervix," which was illustrated.

Dr. Brouwer to Give Herter Lectures.—Dr. B. Brouwer, professor of neurology at the University of Amsterdam, Holland, has accepted an invitation to come to Johns Hopkins University, Baltimore, in April to deliver the annual lectures under the Herter lectureship fund. Dr. Brouwer will be the second European neurologist to lecture in Baltimore recently; Dr. Francis M. R. Walshe, neurologist of University College, London, spent some time at Johns Hopkins a few months ago.

New Outbreak of Measles.—A new outbreak of measles is reported by Dr. C. Hampson Jones, commissioner of health, Baltimore. Records of the department show that 479 cases were reported in six days. Dr. Jones explained the increase in cases reported as being due to parents permitting children who had measles to mingle with other children in order to avoid breaking up the holiday festivities; the most notable increase in cases began after the incubation period from Christmas.

Lectures on Public Sanitation.—The Baltimore City Health Department conducted a series of ten lectures ending Dec. 8, 1925, for the student nurses of the fifteen hospitals that have training schools in the city. The lectures were given in the health department assembly room and were to fulfil the requirements of the National League of Nursing Education, which is that all training schools include a series of public lectures on public sanitation given by persons experienced in public health work. The attendance at each lecture was more than 250.

The Rabies Situation.—More persons applied for the Pasteur treatment for rabies in Maryland during 1925 than in any previous year, according to Dr. Caleb W. G. Rohrer, chief, Pasteur division, state department of health; the number of persons requesting treatment was 688, whereas it was 226 in 1924; of the applicants, 600 were bitten by dogs. Treatment was administered by the state to sixty-six of these persons, and by private physicians to 113 others. The first patient treated this year in this division was bitten, January 2, and examination showed that the dog had rabies.

Equipment Bags for Midwives.—An obstetric bag containing the materials that midwives should use will be given to those who complete a course of instruction in the counties of Maryland given under the auspices of the state health department and the county board. All midwives in the counties mentioned are expected to attend classes, the purpose of which is to assist them to do good work, and to discourage those who are not conscientiously trying to do so. The courses of instruction include a series of eight lessons and demonstrations given by the county health officer, a deputy state health officer, or by a physician from the state bureau of child hygiene who has been specially trained. The classes now being held are in Allegany, Cecil, Howard, Kent, Queen Anne and Anne Arundel counties. There are more than 1,000 midwives practicing in Maryland.

MASSACHUSETTS

University News.—James A. Tobey of the Institute of Government Research, Washington, D. C., and formerly secretary of the National Health Council, lectured on "Public Health Law" at the Harvard University School of Public Health, January 5-7.

Personal.—The governor announced, Dec. 9, 1925, the resignation of Dr. Clarence I. Sparks, Easthampton, an associate medical examiner for fourteen years in the second Hampshire district.——Dr. Roy J. Ward has been reelected president of the Southern Worcester County Health Association.

Society News.—Dr. Edwin H. Place, Boston, clinical professor of pediatrics, Harvard Medical School, addressed the annual meeting of the Essex North District Medical Society, Lawrence, January 6, on "Modern Treatment of Scarlet Fever," and Dr. Robert L. DeNormandie, Boston, instructor in obstetrics, Harvard Medical School, on "The Four Common Causes of Maternal Mortality." Dr. James S. Stone, Boston, president of the Massachusetts Medical Society, also gave an address.——Dr. Walter B. Cannon addressed the Harvard Medical Society, January 12, at the Peter Bent Brigham Hospital, on "Some Recent Observations on Sympathetico-Adrenal Mechanisms."

MICHIGAN

Funds for Measles Epidemic.—The health commissioner of Detroit has requested an appropriation of $11,700, it is reported, to prevent the further spread of the measles in that city, which, in December, 1925, amounted to 940 cases; in the previous month there were 208 cases.

Personal.—Dr. John F. Gruber has been appointed health officer of the city of Cadillac to succeed Dr. David Ralston, who held that position for many years.——Dr. Harry F. Becker, South Haven, has been appointed medical director of the state public school at Coldwater.

Society News.—Professor Philip B. Hadley, Ph.D., of the University of Michigan, addressed the Kalamazoo Academy of Medicine, Dec. 15, 1925, on "The Bacteriophage of d'Herelle and Its Relation to Clinical Medicine."——Dr. Leonard G Rowntree will address the Wayne County Medical Society, Detroit, January 18.

Fined for Not Reporting Births.—Dr. James H. Hudson, Merrill, recently pleaded guilty to a charge of failing to report births under act no. 343, P. A. 1925, and was fined $20 and costs amounting to $20.50. The court allowed Dr. Hudson until January 7 to file all his unreported births, with the understanding that failure to do so would subject him to further prosecution.

Practical Examination Rescinded.—At the recent annual meeting of the Michigan State Board of Registration in Medicine, held at Lansing, the resolution adopted in 1923, authorizing a practical clinical examination for all medical graduates at the completion of the hospital intern year, was rescinded. It was decided that the plan was not practical at this time, that it would work a decided hardship on students, and that a very slight benefit was to be derived.

State Society Referendum.—The council of the Michigan State Medical Society has addressed a letter to every member of the society, requesting him to state what kind of program he desires for the 1926 annual meeting, and whether he prefers the meeting to be in the spring or fall of the year. The society departed from the usual custom of section meetings last year, and held four general clinical meetings. The council aims to provide a program that will appeal to the majority of members.

Detroit's Healthiest Year.—The department of health of Detroit announces that 1925 was Detroit's healthiest year, the death rate being 10.9, infant mortality rate, 78.8, birth rate, 26.1, and that there were no outbreaks of communicable disease except pneumonia, of which there were 30,597 cases The death rate was the lowest the city has ever experienced, the next lowest being 11.0 in 1921; in 1900, the death rate was 16.3 and the infant mortality, 185.7. There were 328 persons in the city who lost their lives as a result of automobile accidents in 1925, the worst record in the history of the city, and larger by twenty-six than the number killed in 1924.

Postgraduate Conferences.—The state medical society held postgraduate conferences at Flint and Battle Creek, Dec. 9 and 16, 1925, the attendance being 102 and 121 physicians, respectively. Among others on the program at Flint were Dr. Clifford G. Grulee, Chicago, who spoke on "Hemorrhagic Diseases of the New Born"; Dr. George C. Hale, London, Ont., on "Nephritis from the Point of View of the General Practitioner"; Dr. Rupert S. Corbett, London, England, on "Clinical Types of Gallbladder Disease," and Dr. Cyrenus G. Darling, Ann Arbor, on "Acute Abdominal Conditions." At Battle Creek, Dr. Phil L. Marsh, Ann Arbor, spoke on "Pernicious Anemia" and "Hyperthyroidism"; Dr. Frederick C. Kidner, Detroit, on "Orthopedic Examinations and Corrective Measures" and on "The Management of Fractures," and Dr. George A. Kamperman, Detroit, on "Prenatal Care" and "Modern Obstetrics"; Dr. Thomas D. Gordon, Grand Rapids, on the "New Born," and Dr. Plinn F. Morse, Detroit, on "Diseases of the Liver." During the last year there were held twenty-four postgraduate conferences, with an attendance of 1,596 physicians, and in addition 6,400 high school students were addressed, 715 members of noonday luncheon clubs, and 3,000 laymen at public meetings. The state medical journal says that about 100 speakers from Michigan, Chicago, Wisconsin and Canada gave their time to make this work successful, and in only one instance during the year was a speaker absent, and that was unavoidable.

MINNESOTA

Personal.—Dr. Roscoe C. Webb, Minneapolis, has been elected chief surgeon of the Great Northern Railway to succeed Dr. Harry B. Zimmerman, resigned.

Model Health Ordinances.—The Minnesota State Board of Health and the Minnesota League of Municipalities propose to bring about the appointment of a higher grade of physicians as local health officers; they have also framed, says the *Journal-Lancet*, a set of model ordinances for villages and cities.

Society News.—Dr. Alex Dunlop, Crookston, has been elected president of the Red River Valley Medical Society. ——Dr. Franklin R. Wright addressed the Minnesota Academy of Medicine, Minneapolis, January 13, on "Suprapubic Cystotomy," and Dr. William F. Braasch on "Ureteral Obstruction."

MISSOURI

Chiropractor Fined.—William Duckworth, a chiropractor in St. Louis, was fined $50 and costs by Judge Gayer, January 4, it is reported, following a plea of guilty to a charge of practicing medicine without a license.

Court Sustains Revocation.—Judge Falkenhainer in circuit court, St. Louis, January 4, sustained the action of the state board of health in revoking the license of Dr. Frederic W. Brownfield, Crocker, and formerly of St. Louis, after having found him guilty of false statements concerning his attendance at medical schools. Dr. Brownfield appealed to the circuit court, contending that the board had admitted illegal and improper testimony at his trial.

MONTANA

Health Officer by Chance.—Dr. Charles Floyd Jump, Bozeman, has been appointed health officer of Gallatin County to succeed Dr. Joseph Piedalue. It is reported that when Dr. Jump's "bid" was found to be the same as that of Dr. Piedalue, health officer for 1925, the county commissioners tossed a coin. Dr. Jump has practiced for many years in Bozeman, where he is also city health officer.

NEW YORK

Personal.—Dr. Andrew W. Van Slyke, health officer of Coxsackie in Greene County, has held that position since the state board of health was organized in 1880; he is, therefore, according to the state health department, the dean of health officers in the state.——Dr. Marion E. K. Frisbie has been appointed chief physician to the State Reformatory for Women, Bedford, to succeed Dr. Alberta Greene, resigned. Dr. Frisbie comes from Norristown, Pa.

Award of Medal in Chemistry.—Samuel C. Lind, Ph.D., associate director, U. S. Fixed Nitrogen Research Laboratory, Washington, D. C., has been awarded the Nichols medal in chemistry for 1925 by the New York section of the American Chemical Society for work on "The Chemical Activation of Alpha Particles." Dr. Lind was formerly assistant in chemistry at the Massachusetts Institute of Technology, and assistant professor of general and physical chemistry at the University of Michigan, and in 1923 chief chemist of the U. S. Bureau of Mines. He originated the ionization theory of the chemical effects of radium rays.

Campaign to Eradicate Diphtheria.—The state health commissioner announced the opening of a campaign, January 1, to eradicate diphtheria from New York. The first step will be to convince parents, public officials and others of the desirability of protecting children under 10 years of age against diphtheria with toxin-antitoxin. The commissioner recommends that all local health officers lay out a definite program, secure appropriations necessary to immunize children to whom immunization would not be possible otherwise, and arouse interest and support to assist in promoting this movement. The state department of health furnishes standardized toxin-antitoxin mixture without charge to health officers, school physicians and private practitioners of medicine.

New York City

Personal.—Dr. Louis Carp has been elected president of the Metropolitan Medical Society.——Dr. William H. Pound has been made deputy health commissioner of New York.——Dr. Simon Flexner, director, Rockefeller Institute for Medical Research, has been elected an honorary member of the Société de pathologie exotique of Paris.

Society News.—At the annual meeting of the New York Academy of Medicine, January 7, Dr. Linsly R. Williams spoke on "The Future Work of the Academy"; Dr. Samuel W. Lambert, on "Academy Activities in Our Present Building," and Dr. D. Bryson Delavan, on "Early Days in the Academy."——Dr. William H. Park addressed the Flatbush Medical Society at the Cortelyou Club, Brooklyn, January 8. on "Scarlet Fever: Its Prevention, Control and Specific Treatment."

NORTH CAROLINA

Personal.—Dr. Alonzo H. Myers, Charlotte, has been placed in charge of the orthopedic clinics recently established by the state to care for indigent cripples at Fayetteville and Charlotte.——Dr. Everett F. Long, Raleigh, deputy state health officer, tendered his resignation to the state board of health, effective, Dec. 31, 1925, in order to engage in private practice.

Community Hospital Proposed.—A banquet was held at Burlington, Dec. 23, 1925, by prominent citizens of that city and Alamance County to consider the founding of a community hospital which would be enabled to receive aid from the Duke Endowment. Dr. Watson S. Rankin gave an address explaining the advantages of a community hospital and the extent to which the Duke Endowment would aid. A committee was appointed to work out plans for a hospital.

OHIO

Personal.—Dr. Herman H. Van Horn, Springfield, former instructor in Dartmouth Medical School, Dartmouth, N. H., has joined the staff of Wittenberg College, Wittenberg; he will teach embryology.——Dr. Willis B. Merrill, Columbus, has been appointed chief physician at the Ohio State Penitentiary, to succeed Dr. C. Larimore Perry, resigned.——Dr. John C. Stratton has been elected a member of the board of education of Middletown.——Dr. Oliver R. Eylar has been reelected health commissioner for Pike County for a term of two years.——Dr. Joseph S. Rardin, Portsmouth, has been elected chief of the staff of the Portsmouth General Hospital.

Society News.—Dr. Joseph C. Aub, assistant professor of medicine, Harvard University Medical School, Boston, addressed the Cincinnati Academy of Medicine, January 4, at the University of Cincinnati College of Medicine, on "Lead Poisoning."——Dr. Oliver P. Kimball, Dayton, addressed the Preble County Medical Society, recently, at Eaton, on "Diagnosis, Prevention and Treatment of Goiter."——Dr. Henson M. Hazelton, Lancaster, addressed the Athens County Medical Society, Dec. 1, 1925, at Nelsonville on "Advantages of the American Medical Association."——Dr. Lewellys F. Barker, emeritus professor of medicine, Johns Hopkins University, Baltimore, addressed the Columbus Academy of Medicine, Dec. 14, 1925, on "Life and Health."——Dr. Theodore F. Myler has been reappointed health commissioner of Washington Court House.——Dr. Karl D. Figley, Toledo, addressed the Putnam County Medical Society, January 7, on "Periodic Health Examinations."——Dr. Lewis F. Smead addressed the Wood County Medical Society, Bowling Green, Dec. 17, 1925, on "Diagnosis of Acute Conditions in the Lower Abdomen."

Hospital News.—At a meeting of the public health federation, Cincinnati, Dec. 17, 1925, the newly elected president, Dr. Thomas A. Ratliff, announced that a $250,000 building to house feebleminded persons would be constructed in Hamilton County in the near future, and that this sum had already been allotted to the state welfare department by the state. Dr. Martin H. Fischer, professor of physiology, University of Cincinnati College of Medicine, addressed the meeting on "Public Interest in Scientific Methods in Medicine."——The new Allen Hospital, erected for the citizens and students of Oberlin, was dedicated the second week in November, 1925. ——Dr. Emil Novak, Johns Hopkins Medical School, Baltimore, recently addressed the staff of the City Hospital, Massillon.——Ceremonies were held, Dec. 30, 1925, to lay the cornerstone of the new Children's Hospital, Cincinnati, which will be affiliated with the College of Medicine of the University of Cincinnati and the Cincinnati General Hospital. When completed in the spring, it will have thirty private rooms and four wards of twenty-eight beds each. The staff will be selected largely from the faculty of the University of Cincinnati College of Medicine.

PENNSYLVANIA

Personal.—Dr. Samuel J. Dickey, Grove City, has been appointed full-time county health officer of Mercer County. ——Dr. Carey J. Vaux has been reappointed director of public health of the city of Pittsburgh.

Health Council Formed.—To coordinate the health work of the city of Harrisburg and bring into closer cooperation the various health agencies, a health campaign has been formed. Each member agency is entitled to three delegates, and meetings will be held bimonthly. The council is governed by an executive committee on which is, among others, Dr. Clarence R. Phillips, president, Dauphin County Tuberculosis Society. One of its first objectives will be to secure a hospital for contagious diseases.

State Convalescent Hospital.—The secretary of health, Dr. Charles H. Miner, announced, January 8, that the new state hospital for crippled children will be constructed as soon as possible near Elizabethtown. The last legislature appropriated $250,000 for the hospital, which will be in the nature of a convalescent hospital for juvenile patients from various operative hospitals. Especial attention will be given to rehabilitation. There are, it is said, about 25,000 crippled children in the state who need free hospital service. The hospital will care for from 600 to 800 children.

Philadelphia

Society News.—Dr. Henry Dintenfass addressed the Philadelphia Laryngological Society, January 5, on "The Gradenigo Syndrome, with Report of a Case."——Dr. Francis Peyton Rous of the Rockefeller Institute for Medical Research addressed the College of Physicians, Philadelphia, January 6, on "The Phenomena of Biliary Obstruction," and Dr. Arthur D. Hirschfelder of the University of Minnesota, on "The Laboratory Point of View in Clinical Medicine."——Dr. Earl D. Bond addressed the Philadelphia Psychiatric Society, January 8, on "Postencephalitic Behavior in a Group of Boys." ——Dr. William R. P. Emerson, professor of pediatrics, Tufts College Medical School, Boston, addressed the Philadelphia Pediatric Society at the annual meeting, January 12, on "Nutrition and Growth in Children."

RHODE ISLAND

Hospital News.—Samuel G. Ascher, Hartford, has been appointed superintendent of the Miriam Hospital on Parade Street, Providence.

Eleven Deaths from Measles.—The epidemic of measles that is said to have existed in Providence since last fall amounted to about 1,200 cases and eleven deaths, January 1, when there were about 500 cases in the city; three years ago, Providence had an epidemic of measles amounting to about 4,500 cases.

SOUTH DAKOTA

Personal.—Dr. Albert E. Campbell, city health officer of Sioux Falls since last May, has resigned.

Society News.—Dr. Hugh T. Jones, Mayo Clinic, Rochester, Minn., addressed the Sioux Falls District Medical Society recently on "Office Orthopedics." Dr. William P. Roberts, Sioux Falls, was elected president of the society; Dr. Leroy L. Park, Canton, vice president, and Dr. David A. Gregory, Sioux Falls, secretary-treasurer.

TEXAS

Society News.—Dr. Edward Jackson, Denver, addressed a special meeting of the Maricopa County Medical Society recently on "Cancer."——Dr. Robert Y. Lacy, Pittsburgh, was elected president of the Northeast Texas Medical Society at the recent meeting at Mount Pleasant, and Dr. John M. Ellis, Mount Pleasant, secretary-treasurer. The next meeting will be in Texarkana, the second Tuesday in April.

WISCONSIN

Society News.—Dr. Edward C. Rosenow, Rochester, Minn., addressed the medical society of Milwaukee County, January 8, on "Poliomyelitis."

Personal. — Dr. Karl Schlaepfer, instructor in pathology, Yale University School of Medicine, New Haven, Conn., has resigned to enter private practice in Milwaukee.

Dr. Hager Resigns.—Dr. Benjamin H. Hager, who has been associate professor of surgery and head of the department of urology at the University of Wisconsin Medical School, Madison, since the new Wisconsin State General Hospital was established, has resigned to become a member of the permanent staff in urology at the Mayo Clinic, Rochester, Minn.

GENERAL

Appointments of Former Fellows of Research Council.—Dr. Paul B. MacCready has been appointed clinical instructor of surgery at Yale University Medical School, New Haven, Conn.; Dr. Lloyd H. Newman, assistant professor of biochemistry at Howard University School of Medicine, Washington, D. C., and Carl I. Reed, Ph.D., associate professor of physiology, Baylor University College of Medicine, Dallas, Texas. These appointees formerly were fellows in medicine of the National Research Council.

Films for Medical Societies and Schools.—The U. S. Public Health Service has released strip film views, illustrating lesions of syphilis and of skin diseases simulating syphilis, prepared with the assistance of eminent syphilologists and dermatologists. The Surgeon General has planned for the use of this film by medical societies, medical schools and hospitals through the various state boards of health. A number of copies of each film are being made, and while they are not for sale, they will be released to the state boards of health for extended periods.

Information Wanted About a Physician.—Information is desired concerning the whereabouts of Dr. Isidor Ritter, formerly of New York City. Dr. Ritter disappeared "as though the earth swallowed him" in 1907. He was last seen in Rochester; he is about thirty-eight years of age, 5 feet 9 inches tall, of light complexion, with a tattoo mark on his arm and a light area, the size of a nickel, on the back of his head Dr Ritter has relatives in New York, Atlantic City and Philadelphia Information should be forwarded to Dr Henry Reiter, 211 East Tenth Street, New York, who requests that medical journals here and abroad publish a notice

Federal Aid for States for Narcotic Control.—A bill to bring about cooperation among the states and the federal government in the prevention and control of drug addiction has been introduced by Senator Samuel Shortridge of California The measure provides that the treasury department shall make studies, investigations and reports regarding the prevention and control of drug addiction and the treatment of drug addicts The bill apportions $10,000 to each state of the Union, provided such state shall "create a state agency with which the secretary of the treasury shall have the necessary powers to cooperate in the administration of the provisions of the act" The bill follows the usual text of legislation giving federal aid to states on matters which are administered generally by state and federal authorities.

The Leslie Dana Medal—On retiring as chairman of the Missouri Commission of the Blind, in 1925, Mr Leslie Dana established a fund to be used by the Missouri State Association for the Blind for the annual purchase of the Leslie Dana Medal for the Prevention of Blindness The National Committee for the Prevention of Blindness makes the annual award of the medal, nominations will be received with detailed information until March 15 The award will be made under the following conditions (1) long meritorious service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight, (2) research and instruction in ophthalmology and allied subjects, (3) social service for the control of eye diseases, (4) special discoveries in the domain of general science or medicine of importance in conservation of vision Nominations for the award should be made to the National Committee for the Prevention of Blindness, 370 Seventh Avenue, New York

Meat Inspection and Public Health—During the last fiscal year, federal meat inspectors in more than 800 packing establishments in which federal inspectors are maintained condemned about 300,000,000 pounds of meat, according to the U S Department of Agriculture, nevertheless, the vast majority of the animals inspected by the government were healthy The inspection begins when animals are received alive for slaughter, it includes a thorough antemortem and postmortem examination, then a rigid inspection of smoked and cured meats, and a final inspection when these products leave the packing houses The inspection is done by veterinarians who must be graduates of a four year course in an accredited veterinary college, and who must then pass a civil service examination and, in addition, receive special training Federal meat inspection applies only to products handled by establishments which do interstate or foreign business, federal inspected products can be identified by the inspection stamp on fresh meat, and by labels on canned goods Slaughterhouses whose business is conducted within the state in which it is located are not, therefore, subjected to federal inspection This class of products, however, constitutes only about a third of the total meat products produced

Protest Reduction of Tax on Alcohol.—Wholesale druggists and manufacturing chemists are sending protests to the Finance Committee of the Senate against the reduction of the tax on pure alcohol as passed by the House of Representatives The tax reduction bill reduces the tax 55 cents per gallon, Jan 1, 1927, and provides for an additional 55 cents reduction effective, Jan 1, 1928 The effect of this reduction would be to cut the present federal tax on alcohol 50 per cent by Jan 1, 1928 Wholesale druggists state that the present tax is a safeguard against the diversion of pure alcohol for illegitimate purposes, and that with pure alcohol obtainable at a price about equal to the cost of tax free denatured alcohol, those who now divert tax free alcohol for manufacturing purposes would at once attempt to obtain pure denatured alcohol by operating under the guise of pharmaceutic manufacturers They state also that the manufacture of alcoholic medicines by the unskilled would flood the country with low quality and untested products which would be a menace to public health Senator Smoot, chairman of the Finance Committee, has conferred with officials in the treasury department on the advisability of keeping the present tax on alcohol

Endowment for Research in Pure Science.—The National Academy of Sciences announced, January 6, its appeal to a body of prominent public men to join with leading scientists to secure larger resources for research in pure science, it hopes to obtain an income of at least $2,000,000 a year to establish national research professorships and to cooperate in other ways with institutions in this country in the biologic, physical and mathematical sciences The academy has created a special board of trustees for these funds, including Albert A Michelson, president, National Academy of Sciences and Nobel Prize winner, Andrew W Mellon, Charles E Hughes, Edward M House, Julius Rosenwald, Cameron Forbes, Felix Warburg, Robert A Millikan, Owen D Young, Dr William H Welch, Dr Simon Flexner, Dr. Joseph H Breasted and others The announcement states that there is not the slightest conflict between the purposes of the National Academy of Sciences and those of the Smithsonian Institution, which is also now seeking a large endowment It is pointed out that the United States is leading all nations in industrial research but is far behind in pure science research

Bequests and Donations—The following bequests and donations have been announced recently

The Children's Hospital, Birmingham, Ala, $5,000, the New York Association for the Blind, $25 000, and the New York Entomological Society, $10,000, by the will of the late Lewis B Woodruff

St Catherine s Hospital and the Brooklyn Home for the Blind and Crippled Children, each $1,000, by the will of the late Magdalena Lett

The Home for Incurables, Philadelphia, $7,500, for a free bed in the children's department as a memorial to her daughter, by the will of the late Helen N Cresswell

The Cook County Hospital, Chicago, $2,100, by the late Abesido Shbaby, a former patient

Mount Sinai Hospital, New York $5,000, Montefiore Home and the Hebrew Orphan Asylum, each $1,000, by the will of the late Morris Bondy

St Andrew's Convalescent Hospital, New York, $2,500, by the will of the late George V Foster

The St Barnabas Hospital, Newark, N J, $20,0000, to endow a room to be known as "Sardel Spencer Holbrook Room," and $5,000 each to the Home for Crippled Children, Newark, the Association to Provide and Maintain a Home for the Friendless and the Newark Bureau of Associated Charities, by the will of the late Alexander P Holbrook, Newark

To the Galludet Home for the Aged and Infirm Deaf Mutes, Wappingers Falls, $15,000, by the will of the late John B Howard, West Orange, N Y

Jefferson Medical College, $5,000 from Samuel Bell, Jr, and the same amount from John C Martin for the fund for the new hospital annex which now amounts to $782,000

The Home for Blind Children and the Catholic Sisters' Nursing Home, New York, each $500 by the will of Mary Golden

The Home for Aged of the Little Sisters of the Poor, New York, $250, by the will of the late John R McDonald

The New York Academy of Medicine, $5,000, by the will of the late Edward B Bronson

The Highland Park Hospital, Highland Park, Ill, $100,000, by the will of Mrs Edith McGregor Adams

The Grenfell Endowment Fund, $3,000, the Home for Crippled Children, Newark, N J $1,000, by the will of Annie R Miller

The Methodist Episcopal Home for the Aged, the German Evangelical Home for the Aged and the Wartburg Home for the Aged, Brooklyn, each $1,000, by the will of Isaac Bernkopf

Mount Sinai Hospital New York, the Montefiore Home, the United Hebrew Charities, the Hebrew Orphan Asylum and the Home for Aged and Infirm Hebrews each $5,000, the Hebrew Infant Asylum and the Crippled Children's East Side Free School, each $2,500, by the will of the late Harriet Weil

The Society of the United Hebrew Charities and the Jewish Hospital, Philadelphia, each $1,000, by the will of the late William J Ostheimer

Excerpts from Surgeon General's Report.—For almost the first time in the history of United States' quarantine, there was no detention of ship's passengers or crews on account of yellow fever in the year ending June 30, 1925, says Surgeon General Cumming, in his annual report of the public health service to the Secretary of the Treasury The most important event in international health relations during the fiscal year, it is said, was the signing of the Pan-American Sanitary Code by eighteen American republics at Havana, Nov 14, 1924, as yet the code has been ratified by the United States, Cuba, Chile, Peru and Costa Rica, its acceptance by the other countries is expected in the near future India reported more than 276 000 deaths from cholera during the calendar year 1924, nearly four times the number reported in 1923 Incomplete reports from sixty-two countries included more than 50,000 deaths from smallpox during the calendar year 1924 The same countries, during 1923, reported more than 45,000 deaths from smallpox Reports of plague received from forty-nine countries for the year 1924 included more than 400,000 deaths in Asia Attention is called to the increasing number of deaths from automobiles, the rate having increased from less than 1 per hundred thousand in 1906 to nearly 15 in 1923 Reports from thirty-six states show that 111 persons were killed and 1,030 were injured by fireworks in celebrating July 4, 1925 Heart disease ranks first as a cause of death in the United States, and influenza and pneumonia combined are second There are two types of Malta fever in this country, one which is responsible for considerable losses in cattle, but apparently not readily transmitted to man, and another type which is readily transmissible to man through goat's milk In addition to many investigations conducted by the public health service, it continues to supply medical attendance to various commissions, bureaus, boards, services and units for the government; the number of merchant seamen, the principal beneficiaries treated, exceeded the number in any previous year, as did the total amount of all relief furnished; it cost the public health service $3.80 a day to care for each patient in hospital, whereas, in 1923 it cost $4.08 a day.

LATIN AMERICA

First Argentine Surgical Congress.—The Argentine Medical Association is organizing the first national surgical congress, to convene at Buenos Aires in August, 1926. Dr. D. J. Cranwell is chairman of the committee in charge.

Society Election.—At the annual meeting of the Medical Association of Porto Rico, San Juan, Dec. 20, 1925, Dr. E. Fernandez Garcia, San Juan, was elected president; Dr. Agustin R. Laugier, San Juan, vice president; Dr. Ramon M. Suarez, Santurce, secretary, and Dr. M. Pavia Fernandez, San Juan, treasurer.

Prize Offered Cuban Profession.—Our Cuban exchanges mention that the president of the organized manufacturers of surgical instruments in France will donate a urologic instrument to be awarded, after competition, to some young Cuban physician. The prize is to be known as the Joaquin Albarrán prize. The committee of award includes the president of the Havana Academy of Sciences, the dean of the medical faculty, two professors of urology, and some representatives of the Albarrán Association in France.

Personal.—Dr. Armando Pareja Coronel has been appointed governor of the province of Guayaquil.——Dr. F. M. Fernández, Havana, was the guest of honor at a banquet given by the Paris-Latin America Association at Paris, recently. He is professor of ophthalmology, editor of the *Crónica Médico-Quirúrgica*, and presided at the last Cuban medical congress.——Dr. Jayme Pereira has returned to Rio de Janeiro after two years of graduate study of physiology at Harvard and Woods Hole, on a Rockefeller fellowship, with one year in the laboratories of Europe.—Dr. Lucio Córdoba has been appointed chief of the public health service in Chile—a cabinet post in Chile.——It is said that Dr. Voronoff is expected to arrive soon at Santiago to lecture on "Rejuvenation."——A banquet was tendered Drs. J. Dellepiane Rawson and Julio Diez at Buenos Aires on their departure for Europe. The former won by competition a fellowship at the Rizzoli Institute at Bologna.——Dr. F. R. Torres was elected president of the newly founded Sociedad de Tisiología at Córdoba and Dr. A. Lorusso editor of the organ of the society.——Dr. P. Ara, professor of anatomy, Córdoba, was the guest of honor at a farewell banquet at Buenos Aires as he left for a trip to medical centers in other countries.——The medical faculty of the University of Lima has conferred an honorary degree on Dr. Albert L. Barton.

FOREIGN

Measles in London.—There have been 115 deaths from measles in London in the last four weeks, according to the New York *Times*, and 221 deaths during that period in seventy cities of the United Kingdom.

The Devoto International Prize.—Prof. L. Devoto recently completed twenty-five years of medical teaching at Milan, and a gold medal was presented to him. He is the founder and director of the clinic for occupational affections, opened in 1910. A fund has been collected to found an international prize in his name, to be awarded biennially for the publication that has contributed most to the pathology of occupational disease. The Milan Academy of Sciences will award the prize. The monthly issued by the Clinica de Lavoro, Via S. Barnaba 8, Milan, is called the *Medicina de lavoro;* the editor is Prof. L. Preti.

Memorials to Physicians.—The town of Cesena in Italy recently organized a celebration in honor of the pathologist Dr. M. Bufalini, who was born there in 1787.——Switzerland has also been celebrating the centennial of the birth of Dr. Laurenz Sonderegger, one of the pioneers in preventive medicine with word, pen and deed.——As a feature of the recent centennial of the Oporto Medical School (Portugal), the faculty appealed to the local authorities of certain towns asking them to rename streets in honor of the more prominent physicians connected with the school in the last century, when they had been born or lived long on the street.

Interchange of Medical Officers.—Under the auspices of the League of Nations, the Interchange of Medical Officers of Health was held in Tokyo, Japan, from Oct. 18 to Nov. 19, 1925. The delegates made a four weeks' tour of inspection of hospitals, quarantine stations, laboratories and institutes in Japan, and then met in Tokyo for scientific discussions. Among the countries represented were Australia, China, India, Dutch East Indies, the Straits Settlements and Japan; besides the delegates, Dr. L. Rajchman, director of the health section of the League of Nations, Dr. H. Wilson, secretary of the foreign section, and many other prominent Japanese scientists were present. Similar conferences were held in Seoul and Mukden, after the party made a two weeks tour of inspection of the cities and towns in those regions; the conference formally closed, Dec. 4, 1925.

Personal.—The seventy-fifth birthday of Dr. P. G. Unna, professor of dermatology, Hamburg, was celebrated recently, the festivities concluding the next day with a concert, Dr. Unna playing the 'cello in the Schubert C major quintet.——Dr. Vermeulen, Nieuwegracht 165, Utrecht, is the secretary in charge of the Esveld prize of a gold medal and 300 gulden to be awarded for the best study of the vaginal mucosa in domestic animals during the sexual cycle.——Dr. I. Hertzberger is in charge of the newly inaugurated institution at Hilversum, Netherlands, for feebleminded Jewish children. It is to have accommodations for fifty.——Prof. Armand-Delille presided at the recent unveiling of a portrait tablet as a memorial to Grancher, at Cambo, where Professor Grancher was long mayor. The occasion was utilized for the foundation of a branch in southwestern France of the Grancher system of family placement of children to escape tuberculosis in the environment.——Dr. V. Schilling, Sächsische Strasse 8, Berlin, is compiling data on the prevalence of pernicious anemia, as there is an impression of increasing incidence.——A gold medal with album of signatures was presented recently to Prof. F. Neri, Bari, by his friends throughout the region.——A gold medal and pension were recently conferred by the authorities and the citizens on Dr. G. B. Botto, who has been health officer (*medico condotto*) in Novara, Italy, for fifty-two years.

Berlin Faculty Decides Against Official Welcome to American Physicians.—The dean of the medical faculty in a letter to the *Deutsche medizinische Wochenschrift*, Dec. 11, 1925, explains that the medical faculty would be glad to greet the Interstate Post-Graduate Association of North America but is not in a position to do so as long as German physicians and German are excluded from international medical congresses, or until members of the organization sign a document denouncing the resolution to that effect adopted in 1920, and agree to use their influence to have that resolution rescinded. The Berlin faculty adopted this decision, May 19, 1925, and the Interstate Post-Graduate Association officials were notified; notwithstanding, a party of eleven members announced their approaching arrival, July 12, and forty from Paris, July 26. Each party was sent a copy of the letter that had been sent to the Post-Graduate Association, and was notified that the Berlin faculty could receive their visit only when the members had previously signed the required written explanation. No reply was received from the Paris group; the other group wrote that they would recommend the communication for consideration, notwithstanding that they had not seen the clinics and institutes of Berlin. The *Wochenschrift* extols this action of the medical faculty, and urges other faculties to join with the Berlin medical faculty instead of submitting tamely to this "boycott of German medicine, dictated by competitors' envy and a frenzy of revenge" (. . . *von Konkurrenzneid und Rachsucht diktierten Boykott*).

Work of International Health Board of the League of Nations.—At the fifth session of the board, in October, different members of the board were directed to prepare preliminary reports on the frequency of trachoma and the means to control it adopted in other countries; control of the manufacture and sale of articles of food; infant mortality, and the necessity for establishing a center for epidemiologic data on the west coast of Africa. Dr. L. Bernard, who has recently returned from South America, urged the rapid transmission to Brazil of data from the epidemiologic center at Singapore, as an aid in handling Japanese immigration. The malaria commission presented its report on eastern Europe and the basin of the Mediterranean, but urged more study of malaria in Sicily, and of certain other questions which will require investigation in the Southern states of the United States as to what has been accomplished in the fight against mosquito larvae, and by Bass with quinine prophylaxis. The commission urged further study of the deltas of Europe, the Danube, Po, and other rivers, and their connection with malaria; rice fields in Europe; the rôle of domestic and other animals; what has been accomplished by sanitation; the value of the secondary alkaloids of quinine, etc. Dr. Chagas was commissioned to prepare a report on leprosy in Brazil, and Drs. Pittaluga and Raynaud, on leishmaniasis in the Mediterranean basin. Others were commissioned to report on the new immunologic methods of treating measles and scarlet fever, and the value of convalescents' serum. According to the report in the *Gazette des hôpitaux*, Dr. Alice Hamilton, of the Harvard medical faculty, was the only member of the board from the United States.

Deaths in Other Countries

Dr. C. du Bois-Reymond, Berlin, professor of ophthalmology, aged 70. He served for a number of years in the German Medical School at Shanghai.——**Dr. B. von Tobold**, Berlin, of the medical general staff, whose booklet on "Hygiene for the Soldier" had passed through fifty-three editions by 1922.——Dr. S. Politzer, Vienna, director of the Hütteldorff Convelescent Home.

Government Services

Appointment to Medical Council

Dr. Frank B. Granger, Boston, was elected to membership in the U. S. Veterans' Bureau Medical Council at the recent fourth conference to succeed Dr. Thomas W. Salmon, who resigned on account of pressure of other work which prevented his participation in its activities. Dr. Granger is president of the American College of Physiotherapy and instructor in the Harvard University Graduate School of Medicine, and neurologist to the Boston Dispensary; he was director of the department of physiotherapy in the Surgeon General's Office during the World War.

Bill to Fix Salaries in Veterans' Bureau

Provision to fix the pay and allowances of physicians in the Veterans' Bureau, on a basis equivalent to that of the medical officers of the army, is made in House bill 5975, introduced by Congressman Connery of Massachusetts. Under this bill, senior medical officers of the bureau would receive the pay and allowances of colonel; medical officers, that of major; first assistant medical officers, that of captain, and second assistant medical officers, that of first lieutenant. The pay and allowances of nurses in the Veterans' Bureau would be the same as that of nurses in corresponding grades of the Army Nurses Corps. In computing longevity pay, there would be credited to physicians and nurses all service rendered as medical officers or nurses in the Veterans' Bureau Medical Service. The effect of this legislation would be to bring material increases in salary to all physicians in the Veterans' Bureau, place them on a permanent basis, and increase the efficiency of the medical organization of the bureau. Director Hines has for months, been urging that such legislation be enacted; he has secured President Coolidge's approval of the legislation, and in his annual report insisted that it is essential to the best interests of the Veterans' Bureau.

Navy Adopts Kahn Test as Standard

The U. S. Navy Medical Department, Dec. 30, 1925, notified all medical officers that hereafter the Kahn Test would be regarded as the standard test in the serum diagnosis of syphilis and yaws, and that it be so employed as a routine. It is now purely optional whether other tests are employed in the navy, but if employed, they are to be in addition to the Kahn Test. Unit outfits containing the necessary apparatus will be furnished all ships and stations on requisition to the U. S. Naval Medical Supply Depot, Brooklyn, and standardized antigen can be procured on request from the commanding officer, U. S. Naval Medical School, Washington, D. C.

Colonel Kennedy Appointed Assistant Surgeon General

Col. James M. Kennedy, U. S. Army medical corps, has been appointed assistant surgeon general to succeed Brig. Gen. James D. Glennan, who will retire for age, March 2. Colonel Kennedy graduated from South Carolina College in 1884 and the College of Physicians and Surgeons, Baltimore in 1892; he was commissioned assistant surgeon in the army in 1893. Recently, he was in command at the Letterman General Hospital, San Francisco, and during the World War, of the medical personnel at the port of embarkation at Hoboken; he has a D. S. M. and Navy Cross, and is 60 years of age.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 19, 1925.

Remedies for Tuberculosis: The Spahlinger Treatment

At a meeting of the Newport Medical Society, Dr. S. Lyle Cummins, professor of Tuberculosis in University College, South Wales, gave an address on recent remedies for tuberculosis. He described the work carried out in recent years by the medical staff of the Welsh National Memorial Association in the clinical testing of suggested remedies for tuberculosis. At the suggestion of the Medical Research Council and with the cooperation of Prof. Georges Dreyer, the diaplyte vaccine had been carefully tried in about 100 selected cases. In spite of the promising results in the preliminary tests on guinea-pigs, the results of a year's clinical trials had been disappointing. Although the results were good in a proportion of the treated cases, the majority had shown no such degree of amelioration as could be regarded as a success for the diaplyte vaccine. A still more extensive trial of sodium morrhuate, as suggested by Sir Leonard Rogers, had so far led only to inconclusive results, although several physicians had been so favorably impressed by its effects that they were continuing to use it. Møllgaard's "Sanocrysin," a gold salt, was now undergoing systematic investigation. The number of patients so far treated was small, owing to the fact that it had been found necessary to exercise great care in the selection of cases; but results of the highest interest had already been obtained, and it was hoped to apply the treatment to a wider group of cases during the coming year. Turning to the Spahlinger treatment, he said that the situation was quite different. No clinical trial could be conclusive unless accurate information as to the strength of each serum and each vaccine was placed at the disposal of the medical profession. This information had so far been withheld. In none of the published case records was the dose stated, an omission that was fatal to any real weighing of the value of the records in question. Inquiries addressed by him to the best known of the British physicians who had tried the Spahlinger remedies had elicited the curious fact that not one of them had known the strength of the preparations they had employed, the doses having been arranged by M. Spahlinger on a system known to him alone. Professor Cummins illustrated the difficulty by asking how a pharmacologist could test the effects of tincture of digitalis if he was merely given solutions of this drug without any indication as to their strength.

A discussion followed in which Dr. Rocyn Jones, health officer for Monmouthshire, said that he did not apologize for the fact that he was one of the chief protagonists for the trial of the Spahlinger treatment. There were very good reasons why M. Spahlinger had not disclosed the technic of his remedies and the dosage of partial and complete serums in terms of antitoxic units, as demanded by Professor Cummins. He had been strongly advised not to do so at this juncture by first rate clinicians in the best interests of the tuberculous patient and of Spahlinger himself. Unfortunately, bacteriologists who had been privileged to see the workings of Spahlinger's laboratory not long afterward told patients that they were going to prepare them a vaccine by Spahlinger's methods—an utterly impossible proposition. Spahlinger's reason why he had not published every detail of his process was that he was anxious that clinical proof of the value of his methods should first be demonstrated by more extensive clinical trials, because he felt that if other workers for any reason were unable to produce the results which he had obtained, it would react disastrously on the future general application of his treatment. He stated that, when these demonstrations had proved beyond doubt the efficacy of his system of treatment, he was prepared to make known his methods and technic so that the treatment might be available in every country.

Sir Ronald Ross' Campaign Against Malaria in Ceylon

Sir Ronald Ross has sailed for Ceylon in connection with a campaign against malaria. One of the primary objects in the founding of the Ross Institute and Hospital for Tropical Diseases was to create interest throughout the empire in combating this disease. About twenty-five years ago Sir Ronald, who is director-in-chief of the Ross Institute, discovered the carrier of this disease, and, although the successful application of his discovery has rendered certain tropical areas health resorts, compared with what they were at one time, proportionately little progress has really been made throughout tropical and semitropical countries. Addressing members of the Ceylon Association recently, Sir Ronald proposed a scheme calling for the cooperation of all plantation companies, believing that it should be possible, within a short time, to drive malaria out of Ceylon. In certain parts of Malaya, southern India and Assam, groups of plantation companies are dealing effectively with malaria; but if Sir Ronald's mission succeeds it will not be a question of small areas being cleansed, but the whole country. It is his intention to group plantation companies geographically, and each group will be dealt with by a resident malarial expert, who will carry out malaria control measures according to the conditions peculiar to his particular group, and report from time to time to a central committee the progress made and difficulties encountered. Every facility will be given to individuals to combat the disease effectively. It is hoped that Sir Ronald's visit will create worldwide interest in the urgent necessity of dealing drastically with tropical diseases generally. This will be beneficial to the empire, and will hasten its profitable development.

An Overlooked Swab

At an inquest concerning the death of a woman, aged 29, an allegation was made that a swab had been left in her body after one operation and had been found during a further operation. A verdict of "death from misadventure" was returned. It appeared that the deceased entered St. Mary's Hospital, Manchester, July 11, 1925. She was operated on and returned to her home, where she was confined to her bed for nine weeks. On readmission to the hospital a further operation was performed, in the course of which a swab was found to have been left in the body after the first operation. An abscess had set up, and death ensued from peritonitis. A sister at the hospital said that she was present when the first operation was performed. The method followed at operations was to serve out swabs in packets of ten, one packet being used at each operation. The number was checked at the beginning, checked again at the conclusion, and signed for in a special book. This process was followed at the first operation on the deceased, and she signed for ten swabs at its conclusion. She could not account for the swab since found. Another sister at the hospital said she made up the packets of swabs the day before the operations. In reply to a question, she agreed that there might have been eleven swabs in the packet. Dr. Hunter, resident obstetric surgeon at St. Mary's Hospital, stated that he assisted Dr. Bride at the first operation. A most careful examination was made at the close, and there was no sign of any swab having been left in the patient's body. He was present at the second operation when the swab was found. There was an abscess in the abdomen, and in the center was a swab, presumably left at the first operation. The ultimate cause of death was peritonitis. The coroner in returning a verdict of "death from misadventure" said there was no doubt as to the cause of death. At the same time the publication of this case might raise a wrong impression in people's minds. This was one of those cases in which a person became accustomed to performing a certain duty a great many times, and occasionally a mistake occurred. He was quite satisfied that nothing in the nature of criminal negligence had taken place.

The British Social Hygiene Council

The British Social Hygiene Council has just issued its tenth annual report, the first published since the title of the council was changed from that of the National Council for Combating Venereal Disease. The change of name connotes an extension of policy, for it has been decided to supplement the purely medical methods of fighting disease by an attack on those social evils which have been found to favor the spread of disease. It brings the organization, moreover, into more direct relation with similar organizations established throughout the empire. The aims and objects of the council are now defined as: 1. To preserve and strengthen the family as the basic social unit. 2. To promote educative and social measures directed toward the development of control of the racial instinct. 3. To emphasize the responsibility of the community and the individual for preserving or improving, by educative and social measures, the quality of future generations. 4. To further social customs that promote a high and equal standard of sex conduct in men and women. 5. To promote the prevention and treatment of venereal diseases by appropriate educative, medical and social measures. 6. To promote the elimination of commercialized vice. 7. To promote the removal of conditions conducing to promiscuity. 8. To cooperate with the various organizations interested in the foregoing subjects with a view to coordinating efforts to secure these ends. The report draws attention to the progress achieved, and it is shown that between 1920 and 1924 the number of new cases of syphilis presenting themselves for treatment has fallen from 42,000 to 22,000 despite the fact that the number of attendances had risen in the same time from 1,488,000 to 1,645,000.

MADRID

(From Our Regular Correspondent)

Dec. 1, 1925.

The Recent Spanish-Portuguese Urologic Congress

A Spanish-Portuguese urologic congress was held recently at Lisbon. A Portuguese urologist, Dr. E. Bastos, who represented his country, suggested that Spanish urologists should go in a body to Lisbon to hold there a joint meeting with their peninsular neighbors. The sessions proved a great success, as Spanish physicians appeared in force. The occasion also paved the way for more cordial scientific relations. Finally, the Portuguese government honored a number of Spanish surgeons with the order of the Espada (sword). In Spain, bullfighters are called *espadas,* and colloquially surgeons are also nicknamed thus. The new honors have furnished a subject for good-natured banter.

An Odontologist in the National Academy of Medicine

The highest honor a Spanish physician may expect to reach is membership in the exclusive National Academy of Medicine. Each new appointment arouses, therefore, a great deal of interest. The last election proved, however, even more exciting than usual. Dr. Florestán Aguilar, the creator of the Spanish Odontological School, has succeeded in raising his specialty, both scientifically and economically, to a rank fully equal to that of any other medical specialty. The National Academy of Medicine decided to recognize such unusual abilities by calling him to share in its tasks as a fullfledged member. Strange to say, the dentists have been the ones to take exception to an honor so richly deserved.

Tuberculosis Congress

The tuberculosis campaign in Spain is in charge of a few physicians, employed by the government. A central board was also constituted, but mostly composed of noblemen and moneyed people. As usual, these people are too busy to devote much attention to such work; they accept the appointments only in order to parade the position on their visiting cards. When they happen to take any interest in some pending question, it is mostly to exhibit their complete ignorance of scientific matters and to show narrow views and silly prejudices. So far the prevailing policy has been to spend all available funds on the patients and not one cent on those attending them. The physicians at the top accepted this system, as the very fact that they were in the public eye brought them publicity and authority, with an increase in practice and therefore pecuniary returns. The physicians filling secondary positions felt differently. Their displeasure found expression at the recent antituberculosis congress at Fuenfría. The physicians employed in the several antituberculous institutions carried through a protest against present methods in antituberculosis work. This action embodied, however, a tactical error, as the public naturally resented the apparent effort of the physicians to turn to their own use funds heretofore assigned to patients. The congress and its resolutions would have soon passed into oblivion, had it not been for the unwise action of the physicians in official charge of tuberculosis work. Irking under the criticisms aimed at them at the above-mentioned congress, they saw fit to protest to the government against holding a similar meeting, already announced at La Toja, Coruña, one of the best known spas. This meeting had so far attracted but scanty attention. The public now took the other side of the question and persisted in seeing in the protest a desire of bureaucrats to silence any possible criticism of their activities. Even the government felt bound to interfere and, instead of forbidding the meeting, announced that the secretary of the interior would preside over it.

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FINDING SUITABLE EMPLOYMENT FOR HANDICAPPED PERSONS

Supervision of labor, inquiry into the adaptability of applicants for employment, and social hygiene measures have increased the number of workers classified as handicapped. At present society abandons these individuals, since it is difficult to find a place for them in the industries. The number of such handicapped persons exceeds 200 per 10,000 workers (ninety are ill, thirty are victims of accidents, and forty are mentally abnormal). Dr. Heyermans of Amsterdam referred to the urgent need of a service to find suitable employment for handicapped persons. Not only the handicapped workers themselves but also society is interested in seeing their capacity for work become productive. Workshops and educational centers for handicapped persons should be established; these would be suitable also for some types of convalescents. The authorities, insurance societies, and organizations of employers and of workmen should cooperate in the establishment of such a service. At the employment bureaus, a special section under medical and technical direction should be created to aid handicapped persons in securing employment. This problem is closely connected with that of unemployment in general, for the unemployed consist to a great extent of handicapped persons.

WOUNDS OF THE HAND

According to Professor Wittek of Graz, the final result in wounds of the hand depends mainly on the character of the first aid received. More than for any other wound, the twenty-four hours that precedes infection is of paramount importance. Owing to the danger of infection, patients with wounds of the hand should be hospitalized for at least two or three days.

INSURANCE OF AGRICULTURAL LABORERS

Dr. Pisente of Italy discussed the workmen's compensation law in Italy as applicable to agricultural laborers. Since the law has been in force, it has been found that the number of such laborers is much larger than was supposed. Of the 40,000,000 inhabitants of Italy, 9,000,000 have claimed the benefits of this law. Also the number of accidents that have occurred has exceeded all expectations. In the face of certain factors, it is difficult to reduce the number of accidents by a "safety first" campaign. For instance, most of the accidents are caused by animals, and there is no central organization to give first aid. However, the author, with the aid of the Italian Red Cross, has attempted to organize in Italy first-aid stations in the outlying villages.

ELECTRICAL ACCIDENTS

Professor Schridde gave the results of his studies on thirty-nine cases of electrocution, in which an alternating current of from 220 to 250 volts had passed through the hands, trunks and feet of the victims. In thirty-eight of the cases a status thymicolymphaticus was observed. No changes, even of a microscopic nature, were noted in any organ. Edema of the lungs was observed in twenty-one cases, which indicates that these victims did not die until several seconds after the accident; the seventeen others had died instantly. It has not yet been determined why those with a thymicolymphatic diathesis are more susceptible to electric currents and die from fibrillation of the heart. Efforts at resuscitation will not avail unless instituted within a few seconds after the accident.

Professor Jellinek presented observations tending to show that electrical shocks cause merely apparent death. Artificial respiration, if properly performed for two, three or four hours, will sometimes resuscitate the victim.

INTOXICATIONS

Several communications were presented on intoxications caused by hydrogen sulphide, carbon disulphide, hydrocarbons and hydrogen phosphide. Drs. Van Ryssel and Van Herwerden called attention to the dangers of ferrosilicon, and Van Herwerden recommended international regulations with regard to the handling of it. Regulations in force on the Rhine at present have not solved the problem. Many serious cases of poisoning are still observed. Oral and written warnings have not availed to prevent them. It was suggested that the League of Nations might find here a useful field of labor.

BERLIN

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Nov. 28, 1925.

The Excess of Females in Germany

Germany's excess of women over men, according to the census of 1910, with a population of 64.9 million, was 846,000, which indicates that there were 100 women to 97.4 men. The census of Oct. 8, 1919, gave, in the territory reduced by cessions and war losses, a population of 59.9 million and an excess of females over males amounting to 2,860,000 or for 100 women only 90.9 men. The reliability of the 1919 census, however, may have been influenced by postwar conditions. In view of that fact, the preliminary report of the census taken last summer is especially interesting from the standpoint of the distribution of the sexes. In the whole German territory, exclusive of the Saar region, 30,170,000 males and 32,305,000 females were recorded, which points to an excess of females of 2,135,000, or 93.4 men to 100 women, as compared with 97.4 before the war (1910).

This excess of females is noted in all the federal states, and, with the exception of Westphalia, where heavy industries require proportionately more man power, in all Prussian provinces, as well. The discrepancy is most marked in Berlin, where there are only 85.5 men to 100 women. According to the 1910 census, the males exceeded the females at all ages up to 22, with the single exception of age 15, which was represented by an almost equal number for the two sexes. With age 22, the females begin to gain a slight preponderance over the males; that is, in the years marked by the greatest vitality, which is a result of the lower mortality rate among women at this age, and, to a still greater extent, to the greater tendency of males to seek adventure and better opportunities to make a fortune, in foreign lands. However, women of the 25 to 35 age-group seem to present a greater mortality than the men of the same group. Still later—from about age 35 on—and even through the years of the menopause, the mortality of females is usually lower than that of males, who seem affected by occupational factors and pleasure-loving tendencies. Thus there arises, along with the constant loss of males through emigration, an excess of females, which, with increasing age, tends to be still further augmented.

Under normal conditions, such as characterized the census of 1910, the excess of females increases rapidly beginning with age 40. In the 60-70 age-group it reaches nearly 22 per cent, increases in the two following decades to 29 and 42 per cent, and in the 90-100 age-group amounts to 75 per cent. There were only fifteen men more than 99 years old, as against forty-eight women.

Ten Rules of Health

The German Red Cross Society has published a health tract entitled "How to Keep Well." The content is as follows:

1. Health of body and mind is the greatest blessing. Do everything to preserve and enhance this precious blessing. Avoid everything that injures or undermines your health. Be sensible!

2. Let scrupulous cleanliness be your first law for the preservation of health. Most diseases are caused by minute organisms invisible to the naked eye (bacilli), which are transmitted from one person to another. Use soap and water

To **American Medical Association** Dr.
535 North Dearborn Street, CHICAGO, ILL.

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and accidents, especially automobile accidents, and favors to a marked extent the development of venereal diseases. Alcohol constitutes an especially grave danger for children and juveniles. Adults may be injured as to health, economic position and moral character not only by the excessive but also by the habitual moderate use of alcoholic beverages. Alcohol damages the germ cells and thus weakens the oncoming generation. The central federal bureau (*Reichshauptstelle*) for combating alcoholism (Berlin-Dahlem, Werderstrasse 16), together with the amalgamated leagues against alcoholism therein represented, will gladly furnish information in regard to books, pamphlets and leaflets on alcoholism.

7. Beware of venereal diseases. Persons who conduct themselves sensibly can avoid them. Do not neglect this warning. The German society for combating venereal disease (Berlin W. 66, Wilhelmstr. 45) furnishes information and leaflets free of charge. If you become infected, go to a physician and not to a quack. Only prompt and careful treatment can effect a cure and prevent a long, severe illness. A person who, knowing himself (or herself) to be infected with venereal disease, exposes another person to infection
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Berlin-Charlottenburg 5, Frankstr. 3),
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Marriages

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industries in which government supervision is compulsory is increasing constantly. The state may enact measures requiring employers to insure their compensation liabilities. The speaker favored medical examination of an applicant before a choice of occupation is made. Such a precaution would diminish the danger of industrial accidents and occupational diseases. The qualifications required in the various occupations should be determined as a basis for vocational guidance.

FINDING SUITABLE EMPLOYMENT FOR HANDICAPPED PERSONS

Supervision of labor, inquiry into the adaptability of applicants for employment, and social hygiene measures have
increased the number of workers cla
At present society abandons these i
difficult to find a place for them i
number of such handicapped persons
workers (ninety are ill, thirty are vic
forty are mentally abnormal). Dr. He
referred to the urgent need of a s
employment for handicapped persons.
capped workers themselves but also
seeing their capacity for work becon
shops and educational centers for hand
be established; these would be suitab
of convalescents. The authorities, ir
organizations of employers and of wor
in the establishment of such a servic
bureaus, a special section under medic
tion should be created to aid handicap
employment. This problem is closely
unemployment in general, for the un
great extent of handicapped persons.

WOUNDS OF THE H

According to Professor Wittek of G
wounds of the hand depends mainly o
first aid received. More than for
twenty-four hours that precedes infe
importance. Owing to the danger of i
wounds of the hand should be hospit
or three days.

INSURANCE OF AGRICULTURA

Dr. Pisente of Italy discussed the w
law in Italy as applicable to agricultur
law has been in force, it has been fou
such laborers is much larger than w
40,000,000 inhabitants of Italy, 9,000,
benefits of this law. Also the number
occurred has exceeded all expectation
tain factors, it is difficult to reduce th
by a "safety first" campaign. For inst
dents are caused by animals, and ther
ization to give first aid. However, th
of the Italian Red Cross, has attempt
first-aid stations in the outlying villag

ELECTRICAL ACCIDEN

Professor Schridde gave the results o
nine cases of electrocution, in which
of from 220 to 250 volts had passe
trunks and feet of the victims. In thirty-eight of the cases a status thymicolymphaticus was observed. No changes, even of a microscopic nature, were noted in any organ. Edema of the lungs was observed in twenty-one cases, which indicates that these victims did not die until several seconds after the accident; the seventeen others had died instantly. It has not yet been determined why those with a thymicolymphatic diathesis are more susceptible to electric currents and die from fibrillation of the heart. Efforts at resuscitation will not avail unless instituted within a few seconds after the accident.

Professor Jellinek presented observations tending to show that electrical shocks cause merely apparent death. Artificial respiration, if properly performed for two, three or four hours, will sometimes resuscitate the victim.

INTOXICATIONS

Several communications were presented on intoxications caused by hydrogen sulphide, carbon disulphide, hydrocarbons and hydrogen phosphide. Drs. Van Ryssel and Van Herwerden called attention to the dangers of ferrosilicon and

Ten Rules of Health

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2. Let scrupulous cleanliness be your first law for the preservation of health. Most diseases are caused by minute organisms invisible to the naked eye (bacilli), which are transmitted from one person to another. Use soap and water freely. Do not wash just the uncovered portions of the body. The hands should be washed before every meal. Keep your finger nails clean. Keep your dwelling clean. Avoid useless dust-catchers; for example, heavy draperies. The floors should be wiped up daily with a moist cloth. Let in plenty of air and sunshine. Sleep, if possible, with your window open.

3. Make your body stronger and more resistant by means of sensible physical exercise. Room gymnastics should be employed for about five minutes, morning and evening. Take part in the forms of exercise recommended by systematically conducted societies that strive to strengthen the human body. Hiking, games, gymnasium drill, rowing, bathing and swimming are excellent health builders.

4. Take care of your teeth from earliest youth. Mothers, watch your children's teeth. Rinse your mouth and clean your teeth mornings and evenings—if possible, after every meal. Have your teeth examined by a dentist at least twice a year.

5. Remember, well chewed food is half digested. A sensible diet is the primary basis of life and health. Eat rye bread made from whole rye flour that contains all the nutritive material of the grain. Potatoes cooked with the skins on agree best with most persons. Use plenty of fruit and vegetables (do not discard the water in which the latter are cooked). Salads, raw carrots, tomatoes, tropical fruits, and other articles of food that may be eaten raw, contain important accessory food factors (vitamins). Meat, though held in high favor, is not an absolutely necessary article of diet; there are, however, no objections to its use in moderate quantities (children should eat very sparingly of it). A one-sided meat diet may produce injurious effects. A meatless day now and then is a good prophylactic measure. In place of butter, healthy persons, at least, may use without hesitation vegetable and animal fats, or margarines composed partly of each; the alleged dearth of vitamins can be compensated for by the use of other foodstuffs rich in vitamins. Cheese is inexpensive, rich in calories and easily digested. Overseasoning of food is injurious. Coffee in small quantities is harmless but may work injury if used to excess. Better beverages would be coffee substitutes made from grain or malt, or coffee from which the caffeine has been mostly removed. The best beverage is milk. Unfermented grape juice and fruit juices may be highly recommended.

6. Avoid alcoholic beverages. The alcohol found in these beverages (beer, wine, brandy, cider, and others) is a poison which reduces a person's physical and mental performance and lessens his resistance to disease. It weakens one's sense of responsibility, and causes numerous misdemeanors, crimes and accidents, especially automobile accidents, and favors to a marked extent the development of venereal diseases. Alcohol constitutes an especially grave danger for children and juveniles. Adults may be injured as to health, economic position and moral character not only by the excessive but also by the habitual moderate use of alcoholic beverages. Alcohol damages the germ cells and thus weakens the oncoming generation. The central federal bureau (*Reichshauptstelle*) for combating alcoholism (Berlin-Dahlem, Werderstrasse 16), together with the amalgamated leagues against alcoholism therein represented, will gladly furnish information in regard to books, pamphlets and leaflets on alcoholism.

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8. Do not forget that tuberculosis is a contagious disease. Contagion is transmitted chiefly by the coughing of tuberculous persons (tubercle bacilli). Do not cough so as to endanger any one near by. Do not expectorate on the floor. All sputum should be rendered innocuous. Crowded dwellings, uncleanliness, undernutrition and weakness of body favor the contraction of tuberculosis. Young children, especially, should be protected against contagion. Many aged persons who cough are spreading tuberculous infection without knowing it. Ask the tuberculosis welfare centers for advice. The German central committee for combating tuberculosis (Berlin W. 9, Königin-Augusta-Str. 7) will furnish explanatory literature on request.

9. Protect the oncoming generation. Infant mortality can be greatly reduced by proper care and correct diet. Prenatal care should not be neglected. Expectant mothers will receive advice and, if need be, financial assistance at the consultation centers established for their benefit. Mothers, nurse your own children. It is the best protection you can give them. If the baby is ill, consult a physician without delay or go to the infant welfare center. The Kaiserin-Auguste-Victoria-Haus, a federal institution for combating mortality of infants and young children (Berlin-Charlottenburg 5, Frankstr. 3), provides information and literature (pamphlets, leaflets, picture atlas, lecture courses, exhibits), and, together with the German society for the protection of infants and young children (same address), promotes the welfare of infants and young children. Many cripples might avoid their handicapped condition if they promptly consulted a specialist. Even in severe cases, proper treatment will often restore a patient to such an extent that he can earn his own living. It is estimated that 50 per cent of the cripples might have avoided the more serious factors of their handicap if they had received proper treatment early. In Prussia a law provides for the care of all cripples who are in need of help. Every township (*Kreis*) has an official welfare center for cripples. Similar provisions are found in all countries.

10. Arrange your day's work in accordance with the demands of health. Eight hours for work, eight hours for sleep (for adults—children need a longer period) and eight hours of quiet recreation suggest a normal division of the day. Do not turn the night into day

Marriages

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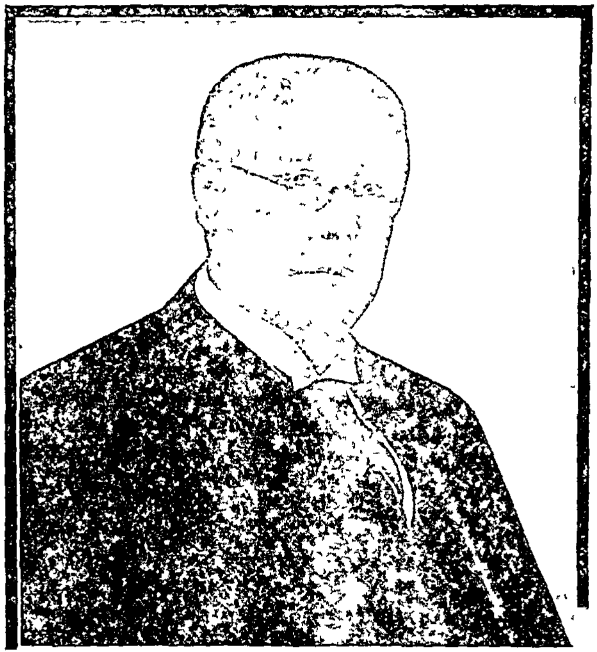
Deaths

James Taggart Priestley ⊕ Des Moines, Iowa, died, Dec. 11, 1925, aged 73, of heart disease. He was born in the old Priestley home at Northumberland, Pa., built by his famous ancestor, Joseph Priestley, in 1794. Dr. Priestley received the M.D. degree from the University of Pennsylvania School of Medicine, Philadelphia, in 1874, and began practice in Des Moines in 1875, completing fifty years of medical practice in that community before his death. In 1915 the *Journal of the Iowa State Medical Society* issued a special number in his honor. During his entire career he entered fully into the medical life of his city, of his state and of the national association, which in 1896-1897 he served as secretary of the Section on Medicine, and from 1894-1900 as a member of the Board of Trustees. In 1900 he was elected president of the Iowa State Medical Society, and from 1909 to 1911 was professor of medicine in Drake University Medical School. In connection with his medical practice, he served also as medical director of several large insurance companies. The descendants of Dr. Joseph Priestley, famed in the history of chemistry as the discoverer of oxygen, include several physicians who have graduated from the University of Pennsylvania. Dr. James Taggart Priestley has been a distinguished exponent of medicine in the Middle West. His high intellectual attainments and his personal charm made him a recognized representative of the exceptional qualities attributed to the best type of family physician and cultured clinician.



James Taggart Priestley, M.D., 1852-1925

Marcus Feingold ⊕ New Orleans, well know as an ophthalmologist, died at the Touro Infirmary, Dec. 26, 1925, after a long illness. Dr. Feingold was born in Roumania in 1871, and received his medical degree from the University of Vienna in 1896. He began practice in New Orleans in 1897, and soon devoted himself exclusively to diseases of the eye. Since 1907, he was professor of ophthalmology in the Tulane University of Louisiana School of Medicine, holding also membership on the medical staff of the Touro Infirmary and other hospitals. Dr. Feingold was especially well known for his activities in medical societies, filling positions of leadership in his county and state societies and serving as chairman of the Section on Ophthalmology of the American Medical Association at the Annual Session in 1924-1925. He was also a member of the American Board for Ophthalmologic Examinations, the American Ophthalmological Society and the American Academy of Ophthalmology and Otolaryngology. His contributions to the literature of ophthalmology were extensive. It is significant that his chairman's address dealt primarily with the value to the specialist, as well as to the general practitioner, of constant interest in medical organizational affairs.

Charles Geraldus Hill ⊕ Baltimore; Washington University School of Medicine, Baltimore, 1870; formerly professor of nervous and mental diseases, Baltimore Medical College, and emeritus professor of psychiatry at the University of Maryland School of Medicine and the College of Physicians and Surgeons; member of the American Psychiatric Association, president, 1906-1907; past president of the Medical and Chirurgical Faculty of Maryland; physician in chief, Mount Hope Retreat, 1886-1925; aged 76; died, Dec. 30, 1925, of heart disease.

James Carlton Carson, Syracuse, N. Y.; Bellevue Hospital Medical College, New York, 1870; member of the Medical Society of the State of New York; formerly associate professor of mental diseases, Syracuse University College of Medicine; assistant physician, Willard (N. Y.) State Hospital, 1870-1883; superintendent of the Syracuse State Institution for Feeble-Minded Children, 1884-1912; aged 78; died, January 1.

William Morgan Smith, Richmond, Va.; University of Maryland School of Medicine, Baltimore, 1880; member of the Medical Society of Virginia; president of the Virginia State Board of Health; executive secretary of the Virginia Tuberculosis Association; served in the Spanish-American War; for eight years postmaster of Alexandria; aged 66; died, Dec. 22, 1925, of cerebral hemorrhage.

William Kinnicutt Draper ⊕ New York; Medical Department of Columbia College, New York, 1888; professor of clinical medicine at his alma mater; on the staffs of the Bellevue and New York Orthopedic hospitals; aged 62; died, January 5, of heart disease. Dr. Draper served as trustee of the Children's Aid Society and as a member of the advisory staff of other institutions.

George Montague Swift ⊕ New York; Medical Department of Columbia College, New York, 1879; formerly associate in clinical medicine, Columbia University College of Physicians and Surgeons; at one time on the staffs of the Orphan's Home and Asylum of the Protestant Episcopal Church in New York, and St. Mary's Free Hospital for Children; aged 69; died, Dec. 26, 1925.

William M. Menah ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1890; formerly instructor and chief clinical assistant in otology at the Medico-Chirurgical College of Philadelphia, and lecturer on otology at his alma mater; for twenty years on the staff of the Medico-Chirurgical Hospital; aged 57; died, Dec. 26, 1925.

Charles Henry Whitlatch ⊕ Louisville, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1905; formerly assistant in surgery, University of Louisville School of Medicine; at one time city health officer; aged 45; died, Dec. 19, 1925, of pneumonia.

Thaddeus Halsted Myers ⊕ New York; Medical Department of Columbia College, New York, 1885; formerly on the staffs of the New York Foundling, St. Luke's, and Lying In hospitals, New York, and the All Souls' Hospital, Morristown, N. J.; aged 66; died, Dec. 25, 1925.

Ronayne Kirkbride Cleborne, Philadelphia; Jefferson Medical College of Philadelphia, 1895; professor of physiology, hygiene and dietetics, Temple University School of Medicine; aged 52; died, Dec. 30, 1925, at the Presbyterian Hospital, of myocarditis.

David C. Harrison, Kite, Ga.; University of Georgia Medical Department, Augusta, 1892; member of the Medical Association of Georgia; member of the state legislature; aged 60; died, Dec. 23, 1925, at a sanatorium in Sandersville, following an operation.

Thomas B. Johnson, Frederick, Md.; University of Maryland School of Medicine, Baltimore, 1889; member of the Medical and Chirurgical Faculty of Maryland; on the staff of the Frederick Hospital; aged 57; died, Dec. 25, 1925, of pulmonary edema.

William Furness Jarvis, Waltham, Mass.; Medical School of Harvard University, Boston, 1880; member of the Massachusetts Medical Society; for nine years member of the school board; aged 68; died, Dec. 25, 1925; following an appendectomy.

George Howard McFadden ⊕ Hackensack, N. J.; Bellevue Hospital Medical College, New York, 1889; member of the American College of Physicians; formerly on the staff of the Hackensack Hospital; aged 59; died, Dec. 30, 1925, of heart disease.

Peter Franklin Smith, Uniontown, Pa.; University of Michigan Medical School, Ann Arbor, 1887; member of the

Medical Society of the State of Pennsylvania; on the staff of the Uniontown Hospital, where he died, Dec. 19, 1925, aged 68.

John Whitfield Merryman ⊕ Kennett Square, Pa.; Jefferson Medical College of Philadelphia, 1899; served in the M. C., U. S. Army, during the World War; aged 49; died, Oct. 7, 1925, at St. Augustine, Fla., of acute dilatation of the heart.

Walter Thorn Flanagan, Ashland, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1903; served in the M. C., U. S. Army, during the World War; aged 55; died, in December, 1925.

Matthew Dalton Phillips, Dalton, N. C.; Medical Department of the University of the City of New York, 1880; member of the Medical Society of the State of North Carolina; aged 74; died, Dec. 20, 1925, of bronchopneumonia.

Charles Edward Simpson ⊕ Lowell, Mass.; Medical School of Harvard University, Boston, 1883; since 1907 state district health officer; formerly superintendent of the Lowell Corporation Hospital; aged 63; died, Nov. 13, 1925.

Joseph Daniel Hartnett, Winsted, Conn.; Baltimore Medical College, 1911; member of the Connecticut State Medical Association; on the staff of the Litchfield County Hospital; aged 39; died suddenly, Dec. 26, 1925.

George Philip Miller ⊕ Oak Park, Ill.; Rush Medical College, Chicago, 1903; formerly on the staff of the Robert Burns Hospital; aged 46; died, Dec. 28, 1925, of chronic myocarditis, chronic nephritis and hypertension.

Samuel A. Street, Wellington, Tex.; University of Tennessee College of Medicine, Memphis, 1901; member of the State Medical Association of Texas; aged 56; died, Dec. 21, 1925.

Thomas Walter Kay, McKeesport, Pa.; University of Pittsburgh School of Medicine, 1896; on the staff of the McKeesport Hospital; aged 54; died, Dec. 8, 1925, of heart disease.

Thomas Edward Roach, Renovo, Pa.; College of Physicians and Surgeons, Chicago, 1890; member of the Medical Society of the State of Pennsylvania; aged 60; died, Oct. 29, 1925.

Charles Moore Wilson ⊕ Salem, Mass.; Medical School of Maine, Portland, 1911; on the staff of the Salem Hospital; aged 42; died suddenly, Dec. 9, 1925, of heart disease.

John Dunlap, Seattle; Baltimore University School of Medicine, 1899; University and Bellevue Hospital Medical College, New York, 1900; aged 69; died, Nov. 4, 1925.

Edwin Hathaway Norton, New York; Medical Department of Columbia College, New York, 1883; aged 66; died, Dec. 10, 1925, of injuries received when struck by a street car.

John McAlpine, Lindsay, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1875; for thirty-five years city health officer; aged 75; died, Dec. 6, 1925.

A. M. Torbit, Gough, Ga.; University of Georgia Medical Department, Augusta, 1887; member of the Medical Association of Georgia; aged 66; died, Dec. 24, 1925.

Zack L. Biggs, Trenton, Tenn.; University of Nashville Medical Department, 1856; Civil War veteran; aged 93; died, Dec. 16, 1925, of pneumonia.

Henry George Lackner, Kitchener, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1876; aged 74; died suddenly, Dec. 4, 1925.

Stephen E. Luckett, Evansville, Ind.; University of Louisville (Ky.) School of Medicine, 1893; died, Dec. 13, 1925, at Chicago, of heart disease.

James W. Gore, Reisterstown, Md.; University of Maryland School of Medicine, Baltimore, 1867; aged 79; died, Dec. 23, 1925, of senility.

George Watt Gallagher ⊕ Connellsville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1889; aged 64; died, Dec. 16, 1925.

Francis Edwin Melugin ⊕ Thomson, Ill.; Long Island College Hospital, Brooklyn, 1879; Civil War veteran; aged 79; died, Dec. 23, 1925.

Frank E. Pilcher ⊕ Detroit; Detroit College of Medicine and Surgery, 1891; aged 64; died, in December, 1925.

Frank Paschal ⊕ San Antonio, Tex.; Louisville (Ky.) Medical College, 1873; aged 76; died, Dec. 20, 1925.

George Asa Birdsall ⊕ Fairbury, Neb.; Rush Medical College, Chicago, 1887; aged 60; died, Dec. 17, 1925.

David Hubbard Camak, Jasper, Ala. (licensed, Alabama, 1884); aged 75; died suddenly, Dec. 10, 1925.

Alfred R. Funke, St. Louis; American Medical College, St. Louis, 1893; aged 51; died, Dec. 16, 1925.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

LOESER'S INTRAVENOUS SOLUTION OF CALCIUM CHLORIDE AND LOESER'S INTRAVENOUS SOLUTION OF SODIUM THIOSULPHATE—AN EXPLANATION

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. Puckner, Secretary.

The Council examined the claims made for Loeser's Intravenous Solution of Calcium Chloride and Loeser's Intravenous Solution of Sodium Thiosulphate on account of inquiries received. The preparations were found ineligible for inclusion in New and Nonofficial Remedies because they were marketed with claims that were misleading and, therefore, unwarranted. Reports of the consideration of these preparations were published (The Journal, March 21, 1925, p. 914; April 25, 1925, p. 1289).

The New York Intravenous Laboratory has objected to the Council's reports. It particularly resents that part of the headings of these reports that declare the products "Not Accepted" for New and Nonofficial Remedies. The firm holds that as it did not request consideration of the products which are the basis of the reports, the term "Not Accepted" is incorrect.

The New York Intravenous Laboratory has not adduced any facts that were not considered in the report itself. The phrase "Not Accepted" is perfectly correct, for the derivation of the word "accept" shows that it does not necessarily assume an offer. The term "Not Acceptable," however, is a better caption, because it is not open to a double interpretation. Since the New York Intravenous Laboratory expresses the belief that readers of the reports may be led to assume that it had requested the Council to consider these preparations, the Council directed publication of this statement to explain that the firm did not take this step.

MEDICAL MAIL ORDER FRAUDS

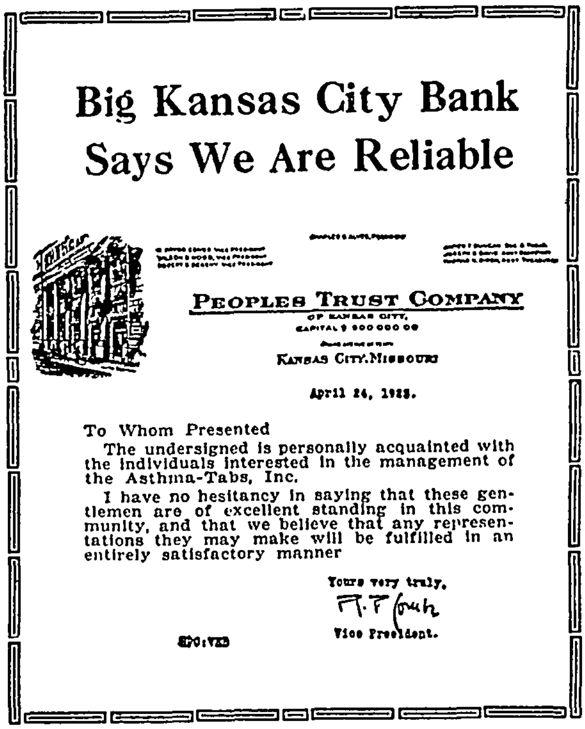
The Postal Authorities Bar Three Quack Concerns From the Mail

The postal authorities continue to do good work in protecting the public from the wiles of the medical swindler who would use the United States mails in carrying on his business. A piece of asthma cure quackery and two lost manhood fakes have recently had their activities curbed by the issuance of a fraud order.

ASTHMA-TAB LABORATORIES

As long ago as Sept. 27, 1924, The Journal exposed the fraudulent pretences of the Asthma-Tab Laboratories, Inc., of Kansas City, Mo. Now the government has declared it a fraud and closed the United States mails to it. The Journal's article brought out the facts that the business was established as a partnership in 1922 and was incorporated in February, 1924, by the former partners; that the men behind the concern were T. N. Roby, said to be connected with the Roby Printing Company of Kansas City, A. W. Slattery, an advertising manager for a concern that sells women's apparel, C. W. Sydenstricker, a contractor, and F. W. Osborne, who acted as general manager, and that the address of the Asthma-Tab Laboratories, Inc., was the same as that of the Roby Printing Company. It was also stated in the article that much of the Asthma-Tab advertising directed the public to write to "R. N. Townley," although The Journal questioned whether there was such a man. It was pointed out further that part of the "come-on" advertising was the reproduction of a letter purporting to be on the stationery of the Peoples Trust Company of Kansas City, and to have been written by the vice president of that bank, one R. Pryor Combs. It was further shown that examination of Asthma-Tabs in the Association's Laboratory brought out the fact that the stuff was essentially potassium iodide and arsenic trioxide.

Judge Horace J. Donnelly, solicitor for the Post Office Department, in his memorandum to the Postmaster General, recommending the issuance of a fraud order, declares that when these quacks were cited to show cause why they should not be debarred from the mails, F. W. Osborne and T. N. Roby appeared in Washington, accompanied by their attorneys, Messrs. E. E. Gann and George Elliott. The memorandum brings out further that the various individuals running this fraudulent business also had other business connections, Osborne being a partner of Edward H. Manke in the Manke-Osborne Advertising Agency and also president of another mail-order concern which was under investigation by the federal authorities. The memorandum states also that the gross business of the Asthma-Tab fakery was $80,000 a year, of which approximately one half was spent for advertising—the share that newspapers and magazines got for helping this concern swindle the public. The Asthma-Tab concern had about twenty employees, but no physicians, chemists or pharmacists. Quoting from the Memorandum: "The concern has no laboratories, as the name implies, but purchases its medicine from Sharp and Dohme and Eli Lilly, manufacturing chemists." Osborne admitted at the hearing that the nostrum contained potassium iodide, 5½ grains, and Fowler's solution, 1 minim to each tablet, with a filler that varied according to whether it was made by Sharp and Dohme or Eli Lilly. It advertised in about one hundred papers throughout the country, and placed the advertising through the Manke-Osborne Advertising Company — thus demonstrating again the unholy alliance between certain advertising agencies and fraudulent quacks. The "R. N. Townley, president," to whom the public was urged to write and whose existence The Journal in its original article doubted, was purely fictitious. It was, in fact, the name of Townley N. Roby, with the first name put last and the last two initials reversed.



Big Kansas City Bank
Says We Are Reliable

PEOPLES TRUST COMPANY
OF KANSAS CITY.
KANSAS CITY, MISSOURI

April 24, 1923.

To Whom Presented

The undersigned is personally acquainted with the individuals interested in the management of the Asthma-Tabs, Inc.

I have no hesitancy in saying that these gentlemen are of excellent standing in this community, and that we believe that any representations they may make will be fulfilled in an entirely satisfactory manner

Yours very truly,
R. P. Combs
Vice President.

Finance, as well as politics, makes strange bedfellows. Here again it is demonstrated that successful quackery can secure the endorsement of presumably respectable banking institutions.

The government in its investigation found that the claim made by the concern that it would refund without question or quibble money paid by the patient who was not satisfied was also false. In fact, the company had two form letters with which they attempted to "jockey" the victims who demanded their money back. In short, the government proved conclusively that the Asthma-Tab outfit was a fraud from start to finish, and solicitor Horace J. Donnelly recommended that a fraud order be issued against it. It was issued, Dec. 12, 1925.

PERFECTION DEVELOPER

The device advertised as the "Perfection Developer," put out by one Walter H. Hartman of Columbus, Ohio, who did business under the name of Hart and Company, was sold under the claim that it would "restore lost manhood, relieve stricture, varicocele, stop night emissions and restore shrunken organs to full size." The device, as is common in fakes of this sort, was a cylinder of glass, fitted at one end with a piece of rubber for making the tube air-tight when it was pressed against the body, and had a small pump attached for the purpose of exhausting the air when the instrument was in use. The thing was in effect nothing but a mechanical masturbator. Judge Horace J. Donnelly, solicitor of the Post Office Department, after hearing the evidence in the case, recommended that a fraud order be issued against Hart and Company. This was done, Dec. 5, 1925.

BURT VACUUM TUBE

Another device similar in every respect to the one just described was the Burt Vacuum Tube, sold by M. von Schwartz and William Billings of Ithaca, New York, who operated under the trade name B. & V. S. Manufacturing Co. Solicitor Donnelly recommended the issuance of a fraud order against the concern, and it was debarred from the mails, Sept. 1, 1925.

Correspondence

ARTERIOSCLEROSIS

To the Editor:—After careful reading of the papers in The Journal, Nov. 28, 1925, by those who took part in the symposium on vascular and renal disease at the Atlantic City session, I am confused as to the definition of the term arteriosclerosis, so frequently used. Apparently the authors do not all use this word in the same sense. The criteria for diagnosis are clinical, obtained by palpating the available superficial arteries and by measuring the blood pressure The theories, however closely reasoned and deduced from observation, are nevertheless based on individual opinion of the thickness of palpable arteries and the course of the patients' condition under various forms of treatment. These are well recognized methods of clinical research, yet they are open to considerable objection and can hardly be used to develop anything more than a pure theory.

It is not my intention to develop a theory but to direct attention to certain observations which have some factual basis.

In the first place, I called attention some years ago (*Am. J. M. Sc.* **154**:414 [Sept.] 1917) to a grouping of the cases of high blood pressure which seemed to simplify the question and to offer a basis for handling patients more intelligently. The classification concerned only the cardiovascular renal hypertension cases. In brief: Group 1. The arteriosclerotic hypertension: large, tortuous, thick arteries; large heart, especially the left ventricle, and a comparatively low diastolic pressure, usually around 100 mm. of mercury. No kidney signs or symptoms. Group 2. Chronic interstitial nephritic hypertension: now including the modern nomenclature, chronic glomerular nephritis and Volhard's nephrosclerosis. What are also called secondary and primary contracted kidney. Here the diastolic pressure is high as well as the systolic pressure. The renal element is the more important, and this group is the true cardiorenal disease. The urine has the well known characteristics; kidney function is decreased; the nonprotein nitrogen of the blood is increased. Group 3. *Essential hypertonia.* Distinctly hereditary, no kidney lesions clinically demonstrable; may begin rather early in life in the third decade, lasts for years, and has a blood pressure of both high systolic and high diastolic pressures.

Group 1 reveals little or no generalized arteriolar spasm, as the peripheral resistance is not more increased than would be predicted by the considerable hypertension. On the contrary, groups 2 and 3 reveal beyond question, at least to my mind, the evidence of generalized increased peripheral resistance shown by the unusually high diastolic pressure.

What do the authors mean by arteriosclerosis? Do they mean the intimal lesions that occur only on the aorta or its primary branches, which is probably better designated as atherosclerosis? This condition is far from being accompanied in all cases by increased blood pressure during life. Do they mean the medial lesion described years ago by Moenckeberg and known generally by his name, a lesion confined to the media of the medium sized and smaller arteries in which some smooth muscle fibers are found? Do they mean the intimal proliferation and occasional medial thickening in the small arteries of the kidney, for example, which are known as endarteritis obliterans? Or do they mean the actual thickening of the media by fibrous tissue and what often appear to be increased numbers of smooth muscle fibers in the middle coat of the arterioles? In other words, the term arteriosclerosis is loosely used and has different concepts to different individuals.

Some of these lesions are found at the postmortem table, but unfortunately not all are found uniformly enough in cases in which there was increased blood pressure during life to enable us to group the effects and causes definitely.

Some are rather well defined. So-called senile arteriosclerosis has a combination of atheroma and Moenckeberg's degeneration. The kidney is scarred and atrophic. The blood pressure is not increased; on the contrary, it is more apt to be low. A combination of Moenckeberg's degeneration with fibrosis of the arterioles is, in my experience, found in the group of arteriosclerotic hypertension. My cases of this group have been very largely in former athletes who have led for years a sedentary life, have eaten and drunk too much, and have become greatly overweight. Whether strain hypertrophy (Adami) causes the initial medial lesions or toxins cause it or both are debatable questions which are far from being settled. In group 2 there is always endarteritis obliterans of the kidney arterioles. It is an open question whether this rather widespread decrease of the arterial bed of the kidneys secondarily produces left sided cardiac hypertrophy or not. More likely the cardiac hypertrophy follows a generalized vasoconstriction and not alone the narrowing of the arterial bed in any one organ, however important that organ may be as an excretory pathway for substances which the body must get rid of. There is an analogy in the marked fibrosis and intimal sclerosis which Moschcowitz has described (The Journal, Oct. 7, 1922, p. 1196). However, it seems that one must predicate a more widespread arteriolar contraction, or, as Krogh thinks (The Anatomy and Physiology of Capillaries, Yale University Press, 1922) a capillary contraction, in order to produce the degree of increased blood pressure found during the life of such a patient. The fact that no widespread lesions of the finer branches of the arterial tree are found at necropsy naturally leads one to predicate a circulating poison which acts as a vasoconstrictor. Vasodilator drugs temporarily may reduce the pressure, and febrile states which are considered to cause vasodilatation also reduce the increased pressure both systolic and diastolic.

In group 3 there is no constant pathologic lesion of the arteries. Pal informs me that he has looked carefully for arterial lesions in all his cases of essential hypertonia; and although some patients have had the condition for years before death, no changes have been found. Occasionally there seems to be thickening of the media of the arterioles due to increased smooth muscle fibers. About such a change it is difficult to be sure. Comparison with a known normal arteriole in the same subject is necessarily impossible. We are therefore thrown back on functional spasm as the cause of the vascular syndrome. This, however, is no real explanation, but it is the best we have at present.

It is useful to make a distinction between hypertonia and hypertension. In hypertonia the palpable arteries are hard and cordlike when the blood is pressed out of them. The artery feels in spasm. It is uniformly thickened, and feels like a piece of smooth cord. In hypertension, the artery may or may not be felt. If it is physiologic hypertension, as after exercise, it is not felt. If it is arteriosclerotic hypertension (group 1), it can be felt, but is nodular, irregular and tortuous. Hypertonia includes hypertension, but hypertension can occur without hypertonia. Using this definition, so-called essential hypertension becomes essential hypertonia, the term actually in common use among continental clinicians. Group 2 also is hypertonia with the added, frequently found, medial fibrosis.

The work of Newburgh and Marsh on experimental atherosclerosis should not be looked on as proved. They have found some atheromatous lesions in rabbits' aortas which resemble those of man. However, the lesions are far from being constantly produced, and rabbits, as has been known for some time, have spontaneous lesions in the aorta. McLean of London has told me that he failed entirely to confirm the protein-feeding experiments.

If there is any merit in what has been said above, would it not be in the interest of clarity to confine the unmodified term arteriosclerosis to the group 1 cases? In the minds of most men, arteriosclerosis connotes hypertension. This is true to only a limited extent. One might be talking about the atheroma of the aged. If arteriosclerosis is the term to be used in designating a condition characterized pathologically by thickened arteries and increased systolic blood pressure, then care should be used when speaking of the senile form always to call it senile.

Louis M. Warfield, M.D., Milwaukee.

AUSCULTATORY SIGN IN UREMIA

To the Editor:—I desire to call brief attention to an auscultatory sign in cases of uremia, more particularly when this condition is secondary to chronic interstitial nephritis. The sign is an unusual dryness and harshness of the breath sounds to auscultation. This sound is more or less masked when edema of the lungs is present, as would be obviously supposed. I have no satisfying explanation to offer for the sign, although it may be safely inferred that it is in some manner, not as yet understood, dependent on the presence of retained excrementitious products. It is highly probable that the corresponding anatomic lesion is merely intense dryness of the bronchial mucosa and also that of the air cells. Dryness of the mucous membrane of the mouth and throat is much complained of, as a rule, by patients who manifest the sign.

I have frequently pointed out this sign to medical students and hospital interns, at the bedside of sufferers from uremic toxemia. So far as I know, I was the first to discover and call attention to it in connection with uremia. I have recently been informed by Dr. Alfred Stengel, to whom I had many years ago pointed out the auscultatory sign in question, that he has been able to confirm my observations in this respect.

James M. Anders, M.D., *Philadelphia.*

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GLASS PERMEABLE TO ULTRAVIOLET RAYS

To the Editor:—In a recent issue of The Journal I noticed among the English items a report that three sorts of glass had been exhibited at a medical meeting and that one of these was permeable to the ultraviolet rays. In another place, I saw a reference to a "vita glass" that was said to have the same property. Would you kindly advise me as to whether this glass is suitable for use in the place of the quartz in the mercury vapor lamps? Also, kindly give some idea as to the market price at which the glass is quoted. Is there any sort of incandescent lamp on the market made with a glass that is permeable to the ultraviolet light rays?

B. H. Haynes, M.D., St. James, Minn.

Answer.—From time to time various reports have been published by industrial concerns, especially in England, that glass highly permeable to ultraviolet light was now being manufactured. These glasses apparently are possessed of this property by virtue of the fact that they contain a very high proportion of quartz. This increases the difficulty with which they are worked, necessitating a higher temperature and therefore correspondingly increasing the cost. One of the glasses manufactured is known as "vita" glass. According to a circular put out by the manufacturers, F. E. Lamplough, 47 Bunbury Road, King's Norton, Birmingham, England, this glass at a thickness of 2 mm. transmits ultraviolet rays of as short wave length as 270 millimicrons. As sunlight does not contain any rays shorter than 290 millimicrons, it appears to be well able of transmitting the antirachitic solar rays. There seems to be no reason why this glass could not be used for the manufacture of mercury vapor burners. It does not represent the first attempt to make glass which transmits the shorter light waves. Years ago the Jena Glass Works put out a glass known as Uviol glass for this purpose. Like "vita" glass it also possessed the power to transmit the ultraviolet rays to a considerable degree. The difficulty comes in that consideration must be given not only to the qualitative nature of the transmitted light but also to its quantitative character. Furthermore, many materials when submitted to the high temperature that prevails in the mercury vapor lamp will undergo deterioration. This is true even in the case of quartz itself. Even after a few hours' run the transmission of the very short untraviolet rays by the quartz of a new burner is materially lessened. It is difficult, therefore, to state whether or not it would be justifiable to use this glass for the purpose mentioned. Economically, the objections to its use are not great because it is sold at a price of four shillings per square foot for cathedral glass and five shillings for clear glass.

Incandescent lamps made of these new glasses are apparently not yet being produced commercially.

MANOLA—HYMOSA—PHYTOLINE—SUCCUS CINERARIA

To the Editor:—Enclosed please find a pamphlet put out by the Walker Pharmacal Company and the Manola Company. I find numerous mention of their products in Nostrums and Quackery. One would hardly expect them to detail the physician with such preposterous remedies. Are we progressing or retrogressing? I believe some mention of this should be made in The Journal for the protection of some of our gullible brethren.

A. R. Ellison, M.D., New York.

Answer.—The pamphlet referred to is the December, 1925, number of *Medical Suggestions*, issued by the Walker Pharmacal Company and the Manola Company, which, according to our information, are subsidiaries of the Luyties Pharmacal Company, St. Louis. The publication contains articles which are more or less thinly disguised puffs for the products sold by these companies together with testimonials from physicians who say they have used them. Most of the preparations have been commented on in The Journal. Manola is exploited as a "tonic, reconstructive, and tissue builder." The Chemical Laboratory of the A. M. A. found it to be "nothing more than wine, fortified with alcohol and a slight amount of medicinal substances added" (The Journal, April 2, 1910, p. 1154). The formula at present published by the manufacturer, however, indicates the presence of 1⁄120 grain of strychnine phosphate and ¼ minim of solution of potassium arsenite in the maximum recommended dose. This would appear to take Manola out of the class of homeopathic nostrums, but certainly does not justify the promiscuous use advocated in the present circular. Hymosa was found to be essentially a solution of salicylates exploited as a remedy for rheumatism, etc., because it was free of salicylates (The Journal, June 11, 1910, p. 1955). Phytoline is a preparation of pokeberry juice advertised as a "Powerful Anti-Fat." Succus Cineraria Maritima (Walker) is recommended for use in cataract by the Walker Chemical Company, which in 1916 pleaded guilty to the charge brought under the Food and Drugs Act that the claims for this nostrum were false and fraudulent. The claims are still made; but not on the label or in the package (The Journal, Dec. 20, 1924, p. 2041).

A change in the merchandising policy of the Manola Company is noted. Whereas they formerly gave three bottles to the physician who induced his druggist to order a dozen (Physicians as Unpaid Peddlers of Nostrums, The Journal, April 5, 1913, p. 1092), a form letter reproduced in the present pamphlet offers only two 4 ounce samples free, with the statement that "We cannot promise to repeat this offer in the near future."

IMMUNIZATION TO SCARLET FEVER

To the Editor:—How long does the immunity to scarlet fever last after the injection of a single prophylactic dose of Dick's scarlet fever antitoxin? If the immunity lasts, say, six weeks, may the prophylactic dose be safely repeated every six weeks? Please omit my name and address.

M.D., Tennessee.

Answer.—The passive immunity conferred by any antitoxic serum cannot be depended on to last more than three or four weeks.

Since scarlet fever antitoxin, like other antitoxic serums, is obtained from horses, it would not be safe to repeat the dose every six weeks because of the danger of sensitizing to horse serum and the possibility of anaphylactic reactions.

When a more lasting protection is desired, after passive immunization with the antitoxin, the best procedure is to begin active immunization with scarlet fever toxin two weeks after the prophylactic dose of antitoxin has been given.

TREATMENT OF "SOFT CORNS"

To the Editor:—Please send me treatment that works for soft corns between the toes. It seems strange to me that we cannot do anything for soft corns.

Bennett A. Braude, Johnstown, Pa.

Answer.—In order to understand the treatment for soft corns, it is important to realize that soft corns can occur only between the toes, usually between the fourth and fifth, and that the conditions necessary are: (1) contiguity of skin surfaces; (2) moisture, and (3) heat. There is often a sinus present, and usually a fetid odor. Simple chiropody of itself is usually not curative. The various points under treatment are as follows:

A proper, straight last, medium shank, round toe shoe; into these shoes a small felt pad, exerting pressure behind the heads of the metatarsal bones; special exercises to strengthen the supporting structures of the metatarsal arch; a simple dusting powder between the toes three or four times a day; the preparation of a stocking, making a stall for the fifth toe, as a thumb in a mitten; roentgen-ray therapy; radium therapy; operation, consisting of excision of the soft corn and the sinus, if present, and the removal of a bony spur from the phalanx, which may be present and often is the cause of the soft corn.

INCARCERATED UMBILICAL HERNIA

To the Editor:—Please tell me the best treatment for umbilical hernia in a young infant. Is there anything newer or better than pressure with a hard round piece of material (for instance, a button mold), held on by adhesive plaster? Please do not print my name or address.

M.D., Missouri.

Answer.—In children under 2 years of age, incarceration is extremely rare and nonoperative treatment is the rule. Reduction and fixation are accomplished in the following manner: The hernia is reduced with the left index finger, while with the left thumb and middle finger the adjacent abdominal wall is picked up in two folds. Then, with the right hand a wide strip of zinc oxid adhesive plaster is applied to hold the hernia reduced. This adhesive strip should reach from one axillary line to the other. In changing the adhesive, the skin should be cleaned with ether before the new strip is applied, in order to guard against skin irritation, and it is best to place the next strip obliquely so as to avoid the same skin area so far as possible.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.

CALIFORNIA: Los Angeles, March 8-11. Sec., Dr. Charles B. Pinkham, Room 906, Forum Bldg., Sacramento.

CONNECTICUT: Basic Science Board, New Haven, Feb. 13. Chairman, Mr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, Hartford, March 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Board, New Haven, March 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

ILLINOIS: Chicago, Jan. 19-21. Supt. of Reg., Mr. V. C. Michels, Springfield, Ill.

KANSAS: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, March 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

NEW YORK: Albany, Buffalo, New York, Syracuse, Jan. 25-28. Chief, Mr. Herbert J. Hamilton, Department of Education, Albany.

OKLAHOMA: Oklahoma City, March 9-10. Sec., Dr. J. M. Byrum, Shawnee.

PENNSYLVANIA: Philadelphia, Jan. 26-30. Act. Sec., Mr. C. D. Koch, Harrisburg.

PHILIPPINE ISLANDS: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

PORTO RICO: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.

SOUTH DAKOTA: Pierre, Jan. 19. Dir. Med. Licensure, Dr. H. R. Kenaston, Bonesteel, S. D.

VERMONT: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Olympia, Jan. 12. Sec., Mr. William Melville, 15 Insurance Bldg., Olympia.

WEST VIRGINIA: Charleston, Jan. 19. Sec., Dr. W. T. Henshaw, State Health Department, Charleston.

WYOMING: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

New Jersey October Examination

Dr. Alexander MacAlister, secretary of the New Jersey Board of Medical Examiners, reports the written examination held at Trenton, Oct. 20-21, 1925. The examination covered 9 subjects, and included 90 questions. An average of 75 per cent was required to pass. Of the 26 candidates examined, 21, including 4 osteopaths, passed; 3 failed, and 1 withdrew from the examination. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Georgetown University School of Medicine	(1924)	86.7
Howard University School of Medicine	(1924)	77.9, 84.7
University of Maryland School of Medicine	(1924)	82.8
Tufts College Medical School	(1923)	87
Columbia Univ. College of Physicians and Surgeons	(1924)	86.4
University of Pennsylvania School of Medicine	(1924)	87.8
Licentiate of the Royal College of Physicians, Ireland	(1920)	80.4
University of Budapest, Hungary	(1890)*	75.2
University of Naples, Italy	(1920)* 75, (1921)*	75.1
University of Kharkov, Russia	(1912)*	83.1
University of Odessa, Russia	(1915)*	76.9, (1921)* 83.2, (1922)* 75.1, 75.3
University of St. Vladimira, Kief, Russia	(1917)*	75
Osteopaths		75.1, 76.3, 79.1, 84.1

FAILED

College	Year Grad.	Per Cent
University of Havana, Cuba	(1921)*	63.3
University of Naples, Italy	(1902)*	68.4
University of Odessa, Russia	(1917)*	62.9

* Verification of graduation not completed by the American Medical Association.

Massachusetts July Examination

Dr. Frank M. Vaughn, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, July 14-16, 1925. The examination covered 17 subjects and included 170 questions. An average of 75 per cent was required to pass. Of the 153 candidates who took the physicians' and surgeons' examination, 106, including 11 osteopaths, passed, and 47, including 19 osteopaths, failed. Two candidates were licensed by endorsement of their credentials. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
University of Colorado School of Med.	(1917) 87.1, (1925)	84.6
University of Louisville School of Medicine	(1917)	75
Medical School of Maine	(1902)	75
Boston University School of Medicine	(1924) 76.1, (1925)	75, 75.1, 75.7, 76.3, 83.1, 83.6, 83.7, 83.8, 85.6, 87.2, 88.7
College of Physicians and Surgeons, Boston	(1925)	82.3, 86.8
Harvard University	(1921) 90.2, (1923)	83.7, 84.4, 85.7, (1924) 84.3, 88.8, (1925) 78.6, 81.4, 83.6, 83.8, 84.1, 84.8, 85.6, 87.4, 88.6, 90.2, 90.9
Middlesex College of Med. and Surg.	(1923) 79.6, (1924)	78.3
Tufts College Medical School	(1924) 81, (1925)	75.2, 75.9, 76.7, 77.2, 77.7, 78.5, 79.6, 79.7, 79.7, 80.1, 80.4, 80.7, 80.7, 80.9, 81.1, 81.4, 82.1, 82.5, 82.6, 82.6, 82.6, 82.8, 83.5, 83.6, 83.8, 84.3, 84.4, 84.5, 85.2, 85.2, 85.7, 86.2, 86.4, 86.5, 86.6, 86.8, 86.9, 87.3, 87.5, 87.5, 87.6, 88.5, 88.6, 88.8, 89.2, 89.5, 90
St. Louis College of Physicians and Surgeons	(1921)	75 (1924) 75, (1925) 76.8
Albany Medical College, Albany	(1909)	75
University of Pennsylvania School of Medicine	(1909)	78.4
Dalhousie University Faculty of Medicine	(1924)	79.5, 81
McGill University Faculty of Medicine	(1922) 79.7, (1925)	80
University of Naples, Italy	(1914)*	79.7
Osteopaths		75.2, 75.6, 75.8, 76, 76.2, 76.8, 78.8, 79.9, 83.5, 84.3, 85.1

FAILED

College	Year Grad.	Per Cent
College of Phys. and Surgs., Boston	(1922) 66.5, (1925)	74.5
Middlesex College of Med. and Surg., Cambridge	(1922)	68.4, (1923) 61.7, 63.2, 73.5, (1925) 65
St. Louis College of Physicians and Surgeons	(1922)	63.3, 67.4, 68.6, (1923) 56, 57.4, 71.5, 74.4, (1924) 50.2, 63.8, 73.8, (1925) 55, 73, 73.1
Meharry Medical College	(1921)	†
Laval University Faculty of Medicine, Quebec	(1925)	40.8
University of Montreal Medical Faculty	(1923)	69.3
National University, Athens, Greece	(1923)*	44.8
University of Naples, Italy	(1914)* 65.1, (1922)*	50.4
Donskey University, Rostoff on Don, Russia	(1920)*	70.6
University of Constantinople, Turkey	(1914)*	68.5
Osteopaths		52.6, 57.9, 58.1, 58.7, 59.8, 60.2, 60.8, 63.5, 63.6, 68.2, 68.5, 68.7, 69.9, 71.7, 72.5, 72.6, 73.3, 73.9, 74.6

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Harvard University	(1923)	N. B. M. Ex.
Jefferson Medical College of Philadelphia	(1919)	N. B. M. Ex.

* Verification of graduation not completed by the American Medical Association.

† No grade given.

Rhode Island October Examination

Dr. B. U. Richards, secretary of the Rhode Island Board of Health, reports the written and practical examination held at Providence, Oct. 1-2, 1925. The examination covered 7 subjects and included 70 questions. An average of 80 per cent was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Tufts College Medical School	(1924)	89.8
Washington University School of Medicine	(1912)	95.4
Jefferson Medical College of Philadelphia	(1923)	89.3
University of Budapest, Hungary	(1919)*	85.1
University of Paris, France	(1925)*	82.4

FAILED

College	Year Grad.	Per Cent
University of Naples, Italy	(1923)*	75.2

* Verification of graduation by the American Medical Association still incomplete.

Oklahoma September Examination

Dr. J. M. Byrum, secretary of the Oklahoma Board of Medical Examiners, reports the written examination held at Oklahoma City, Sept. 8-9, 1925. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Three candidates were examined and all of them passed. Ten applicants were licensed by reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Oklahoma University School of Medicine	(1924)	92, 92, 93

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
University of Arkansas Medical Department	(1896)	Texas
American Medical Missionary College, Chicago	(1903)	Kansas
University of Kansas School of Medicine	(1922), (1924)	Kansas
St. Louis University School of Medicine	(1909), (1925)	Missouri
University of Cincinnati College of Medicine	(1912)	Ohio
University of Pittsburgh School of Medicine	(1925)	Texas
University of Nashville Medical Department	(1910)	Mississippi
University of Tennessee College of Medicine	(1924)	Mississippi

Missouri October Examination

Dr. James Stewart, secretary of the Board of Health of Missouri, reports the written and practical examination held at Kansas City, Oct. 27-30, 1925. The examination covered 14 subjects and included 133 questions. An average of 70 per cent was required to pass. Twenty-two candidates were examined and all of them passed. The following colleges were represented:

College	Year Grad.	Number Passed
PASSED		
University of Colorado School of Medicine	(1925)	1
Howard University School of Medicine	(1925)	1
Bennett Medical College, Chicago	(1913)	1
Northwestern University Medical School	(1924), (1925)	2
Rush Medical College	(1925)	1
University of Illinois College of Medicine	(1925)	1
University of Kansas School of Medicine	(1923), (1924)	2
University of Louisville School of Medicine	(1905)	1
University of Michigan Medical School	(1923)	1
Ensworth Medical College, St. Joseph	(1910)	1
St. Louis University School of Medicine	(1925)	1
Washington University School of Medicine	(1925)	3
Creighton Medical College	(1924)	1
University of Cincinnati College of Medicine	(1920)	1
University of Pennsylvania School of Medicine	(1925)	2
Baylor University College of Medicine	(1925)	1
McGill University Faculty of Medicine	(1924)	1

Book Notices

The Art and Practice of Medical Writing. By George H. Simmons, M.D., Editor and General Manager Emeritus, American Medical Association, and Morris Fishbein, M.D., Editor, The Journal of the American Medical Association. Cloth. Price, $1.50. Pp. 163, with 21 illustrations. Chicago: American Medical Association, 1925.

John Drinkwater began a review recently with "I must be honest about this." It was not a particularly brilliant review, but that sentence recurred to the reviewer of this book when it came to his attention; and he approached his task with a determination to live up to Drinkwater's position if the heavens fell. He did not breathe a sigh of relief, but he did not feel any worse when he had carefully gone through the book and realized he could be honest about it and still retain the highly esteemed friendship of its authors. It is a good book. It has the peculiar virtue, which is agreeable and not too common, of representing the matured judgment of men who have had large experience in the things they are writing about. It is really a book on the art of preparing medical papers for publication. The first two chapters, on style and words, are brief considerations of the subject of composition and rhetoric. The guidance here is altogether wise and could be profitably taken to heart by nearly all medical writers. It would be interesting and probably very instructive if the authors had given us much more on this subject. With this exception, the work is a handbook on the preparation of manuscripts: the characteristics of acceptable papers and the technical details of the preparation of papers, even to such subjects as the preparing of illustrations and the making of bibliographies. Throughout, the work has the characteristics of a manual of usages of a publishing house which through large experience has arrived at a working philosophy of style and form. Dr. Simmons and Dr. Fishbein have performed a useful service in preparing this manual of medical writing, and they have done well to consider the subject from the editorial point of view. We have some good books on the art of medical writing, such as Sir Clifford Allbutt's "Notes on the Composition of Scientific Papers." There is no other book, however, which considers the subject in the practical way that this does. The work is commended to medical writers by the reviewer—who happens to be an editor in a small way—with an insistence that amounts almost to religious enthusiasm. Any one who has to read the manuscripts submitted by many men, even of light and leading, would be inclined to start a subscription for a fund to place a book like this one in the hands of all medical writers. Good medical writing, like everything else good, requires care and knowledge of how to do it. One does not have to be a stylist—heaven forbid—but he does have to live up to certain principles and certain practices, if his articles are to be a credit to him and a satisfaction to his readers. In order to produce such manuscripts, we know no directions so good as those given in this practical handbook of the art and practice of medical writing.*

Diseases of the Nose, Throat and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D. Revised by Howard Charles Ballenger, M.D., Otolaryngological Staff, Evanston Hospital. Fifth edition. Cloth. Price, $10. Pp. 1080, with 583 illustrations. Philadelphia: Lea & Febiger, 1925.

This volume is the same size as in the previous edition, but a number of changes have been added to the text incorporating newer development, especially on the subject of hyperesthetic rhinitis and the labyrinth. In the operative work, the new Lautenschlager and Halle operations are described. The nose and accessory sinuses are dealt with in the first part of the book, and the anatomy and physiology are first considered. A chapter on office equipment gives in considerable detail a description of the necessary furniture and other apparatus. The various phases of the diseases of the nose and nasal accessory sinuses are presented with considerable detail, particularly with reference to the sinuses and their operative treatment. The second part of the work deals with the pharynx and fauces. The third part is devoted to diseases of the larynx, and the fourth part to the ear. There are numerous illustrations, the operative work being especially well illustrated. Whether some of the newer measures mentioned will be of value, only the future can tell. The effort of the author has apparently been to review and include the whole field, although some of the features have not yet stood the test of time. While there is not much of an original nature embodied by the editor in this last edition, the work as a whole is comprehensive and will no doubt prove of considerable value to the practitioner of otolaryngology.

Text Book of Orthopedic Surgery for Students of Medicine. By James Warren Sever, M.D., Assistant Orthopedic Surgeon, Children's Hospital, Boston. Cloth. Price, $4.50. Pp. 353, with 199 illustrations. New York: Macmillan Company, 1925.

This was written for the medical student and serves as an introduction to the subject of orthopedic surgery. The author believes that orthopedic textbooks in general leave the student confused. He has therefore written the book with the thought of presenting the subject briefly and didactically. He has endeavored to employ simple terms. Few references to the literature are given, and standard procedures of treatment are emphasized. In a few instances, as on the subjects of obstetric paralysis, shoulder disability and apophysitis of the os calcis, more detailed discussion is given. It is to be regretted that under the subject, "Congenital Dislocation of the Hip," no maneuvers are given. Figure 13 reveals a serious mistake by the artist, which was not corrected by the author; in figure 17 the ears are included in the head cast. The discussion on obstetric paralysis reveals the well known authority of the author, whose operation for this deformity is classic. The discussion of the nursing care of orthopedic cases is commendable.

Ekzem und Urtikaria. Klinik, Pathogenese und Therapie. Von Dr. Erwin Pulay. Paper. Price, 7.50 marks. Pp. 191. Berlin: Urban & Schwarzenberg, 1925.

Pulay bases his explanation of the pathogenesis of eczema and urticaria on modern experimental pharmacologic investigations. He considers eczema a vascular inflammatory reaction of the skin resulting from both exogenous and endogenous factors, requiring an "eczematous" receptive condition and a hypersusceptibility of the epidermis and sensory nerve endings. A specific hypersusceptibility to a definite stimulus he terms an idiosyncrasy, and finds that it is characterized by an absence of eosinophilia and a negative reaction to epinephrine, atropine and calcium administration. On the other hand, an anaphylactic eczema is characterized by eosinophilia, vagotonic symptoms, low calcium content of the blood and increased potassium and magnesium content. This type is favorably influenced by calcium and atropine administration. Only a small percentage of eczema and urticaria cases he finds based on idiosyncrasy or specific sensitization. He is particularly impressed by the importance of changes in the blood chemistry in the eczema group. He describes the clinical types of eczema produced by a disturbance of the carbohydrate and purine metabolism. He found the uric acid content of the blood abnormally high in many cases of eczema and pruritus. The occurrence of eczema in the obese as well as in thin persons indicates a disturbed thyroid function. He stresses the importance of the mineral and fat metabolism, particularly the antagonistic rôle of calcium and potassium acting through the vegetative nervous system, together with changes in the electrolytic equilibrium and water content. Experimentally and clinically, he shows that eczema and urticaria can be produced hematogenously. Eczema results only when there has been a previous primary eczema, which in turn is brought on by exogenous factors, chiefly trauma and scratching. He considers pruritus as the most important clinical symptom of eczema, and believes that it is due as a rule to endogenous and hematogenous factors. The therapeutic discussion is complete and detailed. In contrast to many American writers, he finds that roentgenotherapy gives satisfactory results in only a small minority of cases. As a whole, one may say that Pulay has written a stimulating and instructive monograph on one of the most difficult chapters in dermatology.

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* This volume reviewed especially for The Journal by Dr. William Allen Pusey.

Preventive Medicine. By Mark F. Boyd, M D., M.S., C.P.H. Second edition. Cloth. Price, $4. Pp. 429, with 135 illustrations. Philadelphia: W. B. Saunders Company, 1925.

This edition of Dr. Boyd's book is very welcome. The author has evidently revised the first edition with unusual care and thoroughness, since corrections and additions appear with great frequency. A few of these may be noted. Recent work on immunization in scarlet fever and measles is described. The activated sludge process for sewage disposal is given increased consideration, and the section on water supply expanded. The chapters dealing with vitamins and dietary difficiency diseases are materially changed and improved. There is no doubt but that the usefulness of the book has been greatly increased by the revision, on account of the added information that it now contains and the better presentation of the material.

Reports of the St. Andrews Institutes for Clinical Research, St. Andrews, Fife. Vol. II. Cloth. Price, $3. Pp. 190, with 31 illustrations. New York: Oxford University Press, 1924.

This is not a large volume, but it contains several papers well worth study. They are of a higher order of merit than those of the first volume. Sir James Mackenzie writes of the reflex arc as related to cardiac signs, and of cellular and organic activity in relation to symptoms. Professor Herring has articles on the regulating and reflex processes, on the "law of fluctuation" in living tissues, and, with McNaughton, on observations on the lymphatics and lymph glands. Other topics treated include tremor in muscle, cardiac pain, sensory activities of the skin for touch and temperature, the normal infant's chest, and a clinical study of influenza. The subjects are of varied character, as is the manner of their treatment. At times, conclusions are reached that merely substitute a new hypothesis or explanation for an old one, yet without convincing proof. The volume as a whole, however, is stimulating and gives more promise than did the first that something worth while will come out of this school for clinical research, to which Mackenzie devoted his last and most earnest efforts.

Les syndromes d'aortite postérieure (aortite thoracique, aortite abdominale). Par Ch. Laubry, Médecin de l'Hôpital Broussais, A. Mougect et J. Walser. Bibliothèque des grands syndromes. Directeur: H. Roger, Doyen de la Faculté de médecine de Paris. Paper. Price, 35 francs net. Pp. 234, with 29 illustrations. Paris: Gaston Doin, 1925.

Aortitis of the arch of the aorta is fairly well known pathologically and clinically. The aorta from the arch to the bifurcation is, to use the vivid wording of the authors, a region of mystery and silence. In this work are discussed the lesions of this, the posterior, portion of the vessel. Pathology, clinical features and differential diagnosis are carefully considered. Emphasis is laid on the value of the examination by means of the roentgen ray. Various clinical types are described. In fact, there is such a splitting up of the disease into varieties as to make the grouping seem artificial. The book is well written and presents in an interesting and detailed form a syndrome that is commonly treated only in a general way.

Medicolegal

Liability of Physician and of Railroad Company

(Borgeas v. Oregon Short Line R. Co. et al. (Mont.), 236 Pac. R. 1069)

The Supreme Court of Montana, in reversing a judgment that was rendered against the defendants (railroad company and physician) jointly, for $35,000 damages, remands the cause with direction to dismiss the action. The court says that the evidence disclosed that the plaintiff while in the employ of the company as a section hand had a fall backward, striking his hip against a tie. He continued in his employment for five or six weeks and then took sick leave, and a few days later, while he was walking on level ground carrying a pail of slop, the femur of his right leg broke. He was taken to the office of the defendant physician, who was a local physician of the company's, who told him to go to a hospital in Butte; he did not then know that the man was in the employ of the railroad company, and when informed by the man that he was in the employ of the company and wanted to go to Pocatello, Idaho, where the company had the services of a hospital, he still insisted that it was best for him to go to Butte. The man finally went voluntarily to the hospital in Butte, but after about ten days returned home. In his complaint he alleged that the railroad company deducted 75 cents a month from the wages of each employee to provide for the care of sick and injured employees, that the company had not supplied him with the means to pay for hospital services in Butte, and that on his return home, 20 miles from where the defendant physician was located, the latter refused to visit him.

As disclosed by the pleadings, this action was one in contract, for the breach thereof. While the defendant physician was in the employ of the defendant railroad company, he was not an "employee" in the ordinary sense of the term, as used in relation to master and servant or principal and agent. In the ordinary personal injury cases arising out of the negligent act or omission of an employee, the negligent employee may be joined with his employer in an action for damages, under the rule of respondeat superior (let the master answer). The act of the servant becomes the act of the master, who has the right to control the manner in which he discharges his duties, and, when injury results, they are joint tortfeasors (wrongdoers). But the relation of master and servant, or of principal and agent, does not exist between a railroad company as employer and a surgeon employed to treat an injured employee, the reason being that the employer has no right to control the surgeon in the treatment of the case, and the rule of respondeat superior does not apply in cases of such employment. Again, the plaintiff's contract, if any, was with the defendant company, and with this contract the defendant physician had nothing to do; whatever his contract with the company, there was no privity of contract between him and the plaintiff. If the defendant physician was liable in any manner to the plaintiff, it was for malpractice or carelessness on his part in the treatment of the plaintiff as a patient, either the company's or his own, in an action not arising out of the plaintiff's contract with the defendant company, and the two could not be joined, as was done in this case. It followed that the trial court erred in overruling the separate demurrer of the defendant physician.

If the defendant company, being in duty bound to furnish skilled and careful surgeons, by reason of lack of reasonable care in its selection, or the retention of a surgeon after it had been brought to the attention of the officers of the company that such a one through lack of skill or by reason of personal habits had become unfit to serve in that capacity, provided an injured employee with such unskilful or careless surgeon, then it would be liable for the carelessness or malpractice of the surgeon, and the allegation of damage therefrom might properly appear in the complaint. But practically the unanimous holding of the courts on the subject is that where an employer withholds from the wages of its employees a small monthly amount, with the aggregate of which it employs physicians and surgeons to treat such as become ill or injured, and in doing so it is not promoting its own interest by making a profit out of such employment, such employer is not liable to an injured employee for the carelessness or malpractice of such physicians or surgeons in charge of the case, provided it has used reasonable care in its selection of such physicians or surgeons, since it will be regarded as merely administering a charity or trust fund.

It is the duty of one injured while in the employ of such an employer, if refused surgical attention and hospital accommodations, to secure the same elsewhere, and to hold his employer for the cost thereof.

No Penalty Increase of Medical and Hospital Claims

(Industrial Commission et al. v. Hammond (Colo.), 236 Pac. R. 1006)

The Supreme Court of Colorado says that, in this proceeding under the workmen's compensation act of that state to recover compensation for the death of an employee of a lessee of a sawmill, the compensation allowed by the industrial commission was increased 50 per cent on account of the failure of lessor and lessee to carry insurance, and the medical, surgical, hospital and undertaker's claims were likewise increased, 50 per cent. These increases were made because section 27 of the act (laws of 1923, p. 736) provides that if an employer, subject to the terms of the act, carries no insurance, and one of his employees, who has not rejected the act as therein provided, is killed or injured, compensation may be claimed according to the terms of the act, "and in any such case the amount of compensation or benefits provided in this act shall be increased 50 per cent." But the court holds that the commission erred in this case in adding 50 per cent to the medical, surgical, hospital and undertaker's claims. Section 51, laws of 1919, p. 719, imposes on the employer the duty of furnishing medical, surgical, nursing and hospital treatment and supplies and apparatus for a fixed time and to a fixed minimum, regardless of the compensation allowed, and, when such bills are not paid, but are included in the award, they are paid direct to those who have rendered the service or furnished the supplies. In view of these facts, this court cannot construe the words "compensation or benefits," used in that portion of section 27 quoted, as including such expenses.

Action for Malicious Treatment Not Barred by Award

(Walker v. Von Wedel (Okla.), 237 Pac. R. 86)

The Supreme Court of Oklahoma says that, while the plaintiff was employed in a steam laundry, her right hand was severely injured by being caught in the machinery. She received medical treatment from the defendant, a physician in the employ of the laundry and of its insurance carrier under the workmen's compensation act. She subsequently brought this action to recover damages, alleging that, without her knowledge or assent, while she was unconscious under an anesthetic, the defendant forcibly bent the fingers of her hand backward and bandaged them on a board, after which her physical pain greatly increased and extended to and constantly affected her right hand and fingers, arm and shoulder, until some seven weeks after she was dismissed by the defendant she had the injured fingers amputated. She alleged further that the treatment by the defendant was done deliberately, with no thought of saving her from such suffering, but for the express purpose of preventing her from recovering the statutory award of the state industrial commission, against the insurance carrier, for the loss of a hand, which would have been greater than the award for the loss of fingers only, and that the treatment of the injury by the defendant was malicious and in utter disregard of his professional duty toward the plaintiff. The defendant answered that he gave the plaintiff conscientious, faithful, diligent and skilful treatment, which was successful, the plaintiff's condition yielding as fully to the treatment as could reasonably be expected. He also set up that the industrial commission had made an award to the plaintiff for the injuries received by her, and that she was thereby precluded from maintaining this action against the defendant. The plaintiff admitted that she received the award on account of the injury which she received while in the employ of the laundry. The defendant filed a motion for judgment on the pleadings, which motion was sustained and judgment rendered thereon for the defendant.

It might be probable that the plaintiff could not on the trial of this cause substantiate the facts alleged in her petition, but the supreme court is on this appeal by the plaintiff dealing only with the effect of the alleged acts of the defendant, as stated in the plaintiff's petition, as to her right to recover damages. On giving to the workmen's compensation act its full import as to its jurisdiction over an injured employee, this court is unable to construe such act as an inhibition against the employee's right of action against the physician whose acts are alleged to have been of a malicious nature and done solely for the purpose, as this plaintiff alleged, of protecting the employers from certain liability. Wherefore the judgment rendered is reversed, and the cause remanded.

It is true that in the ordinary treatment of injuries wherein an employee's disability is prolonged or accentuated by the unskilful and unprofessional acts of the physician, the employer who selects such physician is liable to the employee for such increased disability resulting from the acts of the physician in the ordinary course of treating the injury. But, where it is alleged that the acts of the physician in treating the patient were maliciously done with a wrongful intent of producing a condition seriously injurious to such patient, and such malicious acts were not within the contemplation of his employment, they are not in contemplation of the workmen's compensation act such as will preclude the patient from maintaining an action against the physician on account of such acts.

Right to First License When Second Revoked

(State ex rel. Fryberg v. Maybury (Wash.), 236 Pac. R. 566)

The Supreme Court of Washington, in granting a writ of mandate requiring the director of licenses of the state to surrender to the relator a limited license to practice drugless healing, says that the license had been returned to the director at the time that a full sanipractic license was issued to take its place. There was no contention that the limited license had not been lawfully and regularly issued, or that any proceeding to revoke it had been had. The order of revocation applied to the full sanipractic license alone, based on the ground that the diploma on which it had been issued was from an institution which it appeared had unlawfully issued diplomas to persons not entitled to them. But the effect of the revocation based on an unauthorized diploma could only destroy whatever rights had their foundation in it. Let it be illustrated thus: If one held a license to practice as a physician and the rules provided that on the presentation of that license and a diploma from any one of certain qualified colleges the applicant should be entitled to a license as a physician and surgeon, would it be contended that if one were so granted and it afterward developed that the diploma was unlawfully issued, or that the college did not have the required standard, the director could cancel the right to practice as a physician as well as surgeon? Manifestly not, for the right to practice as a physician was in no wise dependent on the authority of the diploma, and only that which had its basis in the diploma fell with it. That a license is not a contract is amply sustained by authority. But the right to practice is a valuable property right.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

Isthmian Canal Zone, Medical Association of, Ancon, Jan. 19. Dr. David L. Robeson, Ancon Hospital, Ancon, Secretary.

Sioux Valley Medical Association, Sioux City, Iowa, Jan. 19-20. Dr. R. F. Bellaire, Trimble Block, Sioux City, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

Atlantic Medical Journal, Harrisburg, Pa.

24: 135-200 (Dec.) 1925

Twilight Zone of Medicine. W. K: Mayo, Rochester, Minn.—p. 135.
Indications for Cholecystostomy and Cholecystenterostomy. D. Guthrie, Sayre, Pa.—p. 139.
Recent Changes in Conception of Jaundice. E. B. Krumbhaar, Philadelphia.—p. 140.
Surgical Management of Jaundiced Patient. S. J. Waterworth, Clearfield, Pa.—p. 142.
Symptomatology of Cholecystitis. F. J. Dever, Bethlehem, Pa.—p. 143.
Technic of Cholecystectomy. H. F. Smith, Harrisburg.—p. 144.
End-Results of Biliary Surgery as Seen by General Practitioner. L. Litchfield, Pittsburgh.—p. 145.
Ametropia and Heterophoria. H. F. Hansell, Philadelphia.—p. 147.
Correction in Ametropia and Heterophoria. T. S. Schneideman, Philadelphia.—p. 150.
Heterophoria: Treatment. C. E. G. Shannon, Philadelphia.—p. 153.
Results Accomplished in Conservation of Vision Classes in Philadelphia. M. E. Smukler, Philadelphia.—p. 157.
Problems in Diagnosis of Neurosurgical Conditions. E. C. Russell, Philadelphia.—p. 161.
Treatment of Tuberculosis of Intestine by Oxyperitoneum: Three Cases. S. D. Gleeten, Monrovia, Calif.—p. 163.

Canadian Medical Association Journal, Montreal

15: 1093-1190 (Nov.) 1925

High Blood Pressure. R. D. Rudolf.—p. 1093.
*Relation Between Gastric Acidity and Hydrogen Concentrations of Urine; Effect of Histamin. F. D. Ackman.—p. 1099.
*Simplicity in Management of Diabetic. I. M. Rabinowitch.—p. 1106.
Basal Blood Pressure. J. D. Adamson.—p. 1112.
Pyelitis Manifesting Acute Abdominal Symptoms. W. A. Lincoln.—p. 1116.
*Surgical Treatment of Trigeminal Neuralgia. K. G. McKenzie.—p. 1119.
*Ulcerative Colitis; Case Requiring a Permanent Colostomy. T. G. Hamilton.—p. 1125.
Backache. H. S. Sharpe.—p. 1131.
*Relief of Chronic Pain in Lower Segments of Body by Sacral Epidural Injection. N. Viner.—p. 1136.
Colloidal Gold Reaction of Cerebrospinal Fluid. F. Green.—p. 1139.
Epiphora and Catarrhal Affections of Nose; Treatment. G. H. Burnham.—p. 1143.
Etiology of Cough. J. S. Pritchard.—p. 1145.

Gastric Acidity and Hydrogen Ion Concentration of Urine.—Ackman found that histamin, when given subcutaneously to a person having a normal or high gastric acidity, increases this secretion and produces a well-marked "alkaline tide" in practically all instances. In cases of hypochlorhydria, and in certain cases of achlorhydria in which the secretion of hydrochloric acid is stimulated by histamin, there develops an "alkaline tide" where formerly there was none. In those cases of achlorhydria in which there is no gastric response to the histamin, the "alkaline tide" fails to develop, apparently because of the lack of response on the part of the gastric secretion. The absence of any change in the p_H of the urine in these cases most conclusively rules out the possibility that the reaction in the other cases might be due to increased metabolic activity consequent to the histamin. These findings offer strong evidence in support of the gastric origin of the "alkaline tide," in that in practically all cases a definite relationship between gastric secretion and the p_H of the urine has been demonstrated. Ackman suggests that the consistent relationship between the gastric acidity and the urinary reaction may have a practical application in those cases in which it is impossible to examine the gastric contents directly, and a fair conception of the secretory activity of the stomach may be obtained by means of the urinary p_H curve based on hourly specimens.

Simplicity in Management of Diabetic Patient.—Rabinowitch demonstrates that the diabetic patient may follow a diet which is more practical than the one generally employed. The clinical results alone are proof of this. The principles on which it is based are scientific. The few patients who have both the time and inclination to use scales do so. The method of management described is meant to apply to those persons who represent the great majority of diabetic patients.

Surgical Treatment of Trigeminal Neuralgia.—Section of the sensory root of the fifth nerve is described by McKenzie and illustrated. The diagnosis, symptomatology and rôle of deep alcohol injections is briefly reviewed.

Colostomy for Ulcerative Colitis.—Hamilton's patient had had a colostomy done to cure an intractable ulcerative colitis of twenty-six months' standing. Almost all the colon, except the cecum and a few inches above it, had been damaged by the ulcerative process. Following the colostomy, a prolapse of the cecum developed which, with the exception of a few days, had been continuously herniated eleven months. The colon during this period was spared the irritating effect of the fecal matter on its ulcerated surface. When the prolapse was reduced, the patient immediately suffered from an exacerbation of the ulcerative process with general malaise, acute arthritis, rise of temperature and other symptoms. Hamilton resected a short portion of the colon at the hepatic flexure in order to interrupt its continuity and brought the distal end out through an incision in the midabdominal wall about 2 inches above the umbilicus. The ulcerative process in this portion of the bowel has absolutely refused to heal, and an intermittent discharge of mucus and pus persists with a not infrequent trace of blood, but the patient has gained weight, eats well and is able to work.

Sacral Epidural Injection for Pain in Lower Extremities.—Viner has found this method of treatment remarkably effective in its results in the sciaticas, the locomotor ataxias, amputation stump neuralgia, traumatic neuritis, and coccygodynia. It was definitely beneficial in rectal cancer, thromboangiitis obliterans, sacral cord tumor and arthritis deformans.

Colorado Medicine, Denver

22: 413-464 (Dec.) 1925

Rheumatism. C. E. Edson, Denver.—p. 416.
Colorado Psychopathic Hospital: Historical Note. H. T. Pershing, Denver.—p. 420.
*Laryngeal Carcinoma: Supplementary Report of Case Operated on Eighteen Years Ago. F. L. Dennis, Colorado Springs.—p. 421.
Fractures of Pelvis. Z. H. McClanahan, Colorado Springs.—p 422
Significance of Certain Pathologic Pupillary Changes. G. H. Hopkins, Pueblo.—p. 427.

Carcinoma of Larynx.—In 1908 Dennis reported a case of intrinsic laryngeal carcinoma in which operation by laryngofissure was done in October, 1907. The patient was reexamined in February, 1925. At that time the interior of the larynx was perfectly smooth, and while considerably distorted by scar formation, there was sufficient lumen for comfortable breathing. The woman had a very good voice, although it was not perfectly clear, owing to the fact that she had to use her false bands for phonation. Her general health was excellent and she was well able to do a good deal of hard housework.

Georgia Medical Association Journal, Atlanta

14: 442-483 (Nov.) 1925

Pediatrics and Public Health. H. B. Neagle, Augusta.—p. 442
Athens Child Health Demonstration. T. B. Gay, Athens.—p. 448.
Better Colon Lavage. W. W. Blackman, Atlanta.—p. 452.
Splenic Anemia; Case. H. W. Birdsong, M. A. Hubert and G. O. Whelchel, Athens.—p. 453.

Illinois Medical Journal, Oak Park

48: 421-500 (Dec.) 1925

Modern Aids to Labor. W. B. Hendry, Toronto.—p. 441.
Goiter from Viewpoint of Surgeon. E. L. Moorhead, Chicago.—p. 444.
Medical Aspects of Goiter. C. L. Mix, Chicago.—p. 447.
Pathologic Viewpoint of Goiter. L. Arnold, Chicago.—p. 449.
Ocular Manifestations of Exophthalmic Goiter and Larynx in Goiter. R. J. Tivnen, Chicago.—p. 451.
Some Easily Overlooked Manifestations of Circulatory Failure. D. Riesman, Philadelphia.—p. 455.
Phases of Cancer Question. C. E. Black, Jacksonville.—p. 460.
Scarlet Fever: Treatment. A. L. Hoyne, Chicago.—p. 465.
Epidemic of Typhoid Fever Probably Due to Infected Oysters. C. T. Roome, Evanston.—p. 469.

Tonsillectomy: New Aseptic Method of Controlling Hemorrhage. O. J. Nothenberg, Chicago.—p. 472.
Child Hygiene. E. B. Lowry, St. Charles.—p. 479.
Ageing and Alzheimer's Disease. F. P. Norbury, Jacksonville.—p. 485.
Dangers and Essential Safeguards in Alkali Treatment of Peptic Ulcer. L. C. Gatewood, Chicago.—p. 491.

Johns Hopkins Hospital Bulletin, Baltimore

37: 285-367 (Nov.) 1925

*Histologic Changes Brought About in Cases of Exophthalmic Goiter by Administration of Iodin. W. F. Rienhoff, Jr., Baltimore.—p. 285.
*Biology of Streptococcus Erysipelatis. III. Experimental Production of Erysipelas in Rabbits; Demonstration of Protective Power of Immune Erysipelas Serums. K. E. Birkhaug, Baltimore.—p. 307.
Congenital Duodenal Septum with Obstruction. S. M. Seidlin, Baltimore.—p. 328.
*Congenital Cysts of Lung. A. R. Koontz, Baltimore.—p. 340.

Histologic Change in Thyroid Induced by Iodin.—The changes produced by iodin in cases of exophthalmic goiter, according to Rienhoff, are as follows: (*a*) increase in size of the thyroid as a whole; (*b*) decrease in vascularity and probably in the lymph flow through the gland; (*c*) a large increase in amount of fibrous connective tissue; (*d*) striking increase in amount of colloid deposited and contained within the thyroid; (*e*) a change in the acini from lace-like papillomatous ingrowths to round, even-walled smooth acini, regular in size and form; (*f*) a transition of epithelium from high columnar to flat cuboidal and occasionally low columnar; (*g*) a change in the nuclei of epithelial cells from large clear nuclei to the small irregular pycnotic type; (*h*) the presence of many mitotic figures before the use of iodin and their absence after iodin has been given. In comparing the histologic structure of the thyroid in thirty cases of exophthalmic goiter, in fifteen of which iodin had been given and in fifteen of which no medication whatever had been used, it was observed by Rienhoff that the histologic picture following the administration of iodin was constant, and, compared with the microscopic structure of the glands of the patients not receiving iodin, corresponded exactly, as had the microscopic changes in three cases in which an examination of the gland was made in each patient before and after the administration of iodin. The colloid state is proved clinically and histologically to be less active than the hypertrophic and hyperplastic state. An artificial remission is produced by iodin. A remission in a case of exophthalmic goiter is associated with a change in the histologic picture from a hyperplastic to a colloid state, even though there is a definite evidence of hyperplasia yet remaining. It is a question of a relative hyperplasia.

Experimental Erysipelas.—Intracutaneous inoculation of hemolytic streptococci isolated from human cases of erysipelas produced typical erysipelas-like lesions in the skin of normal and susceptible rabbits. Three types of lesions were observed by Birkhaug: erythematous, diffuse and phlegmonous. The pathologic picture of the erythematous and diffuse lesions was similar in nature to that seen in human cases of erysipelas. Intracutaneous infiltration of mixtures of immune erysipelas serum and hemolytic streptococci of erysipelas origin afforded local protection against the injurious action of the streptococci. Normal rabbit serum or immune erysipelas serum heated at 60 C. for thirty minutes failed to protect the skin against the harmful effects of the inoculated erysipelatous streptococci. Intravenous or subcutaneous administration of large doses of immune erysipelas serum protected the animal against lethal doses of hemolytic streptococci isolated from erysipelas, when the serum was injected twenty-four hours before the bacterial inoculation. Normal rabbit serum or immune erysipelas serum heated at 60 C. for thirty minutes offered no protection against the lethal dose of erysipelatous streptococci. Immune erysipelas serum afforded no local or general protection against the harmful action of hemolytic streptococci isolated from nonerysipelas sources. Intradermal infiltration of Dochez' antiscarlatinal serum produced the blanching phenomenon in the rash of 94 per cent. of the scarlet fever patients, whereas similar infiltration of antierysipelas serum failed to produce the blanching phenomenon in the rash of scarlet fever. Intradermal, intravenous and intramuscular injections of large doses of immune erysipelas serum in cases of erysipelas seem to offer promise for the specific treatment of the disease.

Congenital Cysts of Lung.—Koontz reviews 108 cases recorded in the literature, and reports one new case in detail. The baby died on the twelfth day of life from other causes. Multiple cysts were found in the lung.

Journal of Bacteriology, Baltimore

10: 513-594 (Nov.) 1925

Study of Anaerobic Bacteria. J. H. Brown, Princeton, N. J.—p. 513.
*Bacteriologic Content of Market Meats. C. M. Brewer, College Park, Md.—p. 543.
Long Tube Method of Cultivating Micro-Organisms: Mobile Colonies in Liquid Medium. L. B. Bibb, Washington, D. C.—p. 561.
*Club-Formation by Actinomyces Hominis in Glucose Broth. V. Actinomycetum-Comitans. S. Bayne-Jones, Rochester, N. Y.—p. 569.
Microbic Heredity. II. Sexual Cycle of B. Coli in Relation to Origin of Variants: Neisser and Massini's B. Coli-Mutable. R. R. Mellon, Rochester, N. Y.—p. 579.

Bacteriologic Content of Meat.—Of the bacteria encountered by Brewer in different meats, the colon group predominated. Prepared meats usually contained more bacteria than fresh meats. Smoked meats contained a much smaller number of bacteria than fresh meats. The appearance of fresh meats could not be taken as an index to its bacterial content.

Cultures of Actinomyces.—Cultures of *Actinomyces hominis*, isolated from a closed lesion of a patient with actinomycosis, were grown by Bayne-Jones in glucose agar and glucose broth without the addition of serum or any other animal protein. *B. actinomycetum-comitans* (Klinger, 1912) was found associated with the strain of *Actinomycetes hominis* isolated from this patient. This is the first recorded observation of the occurrence of this organism in the lesions of actinomycosis in this country.

Journal of Experimental Medicine, Baltimore

42: 593-746 (Nov.) 1925

Specific Infectious (Diphtheroid) Cystitis and Pyelonephritis of Cows. F. S. Jones and R. B. Little, Princeton, N. J.—p. 593.
*Effect of Ethyl Urethane Anesthesia on Acid-Base Equilibrium and Cell Contents of Blood. J. A. Hawkins and J. B. Murphy, New York.—p. 609.
*Urobilin Physiology and Pathology. V. Relation Between Urobilin and Conditions Involving Increased Red Cell Destruction. R. Elman and P. D. McMaster, New York.—p. 619.
*Glomerular Distribution of Blood in Mammalian Kidney. J. M. Hayman, Jr., and I. Starr, Jr., Philadelphia.—p. 641.
*Physiologic Response of Circulatory System to Experimental Alterations. I. Effect of Intracardiac Fistulae. E. Holman and C. S. Beck, Cleveland.—p. 661.
*Id. II. Effect of Variations in Total Blood Volume. B. S. Beck and E. Holman, Cleveland.—p. 681.
*Primary Lung Tumors in Mice Following Cutaneous Application of Coal Tar. J. B. Murphy and E. Sturm, New York.—p. 693.
*Soluble Specific Substance of Strain of Friedländer's Bacillus. I. M. Heidelberger, W. F. Goebel and O. T. Avery, New York.—p. 701.
*Id. II. Chemical and Immunologic Relationships of Pneumococcus Type II and of Strain of Friedländer's Bacillus. O. T. Avery, M. Heidelberger and W. F. Goebel, New York.—p. 709.
Soluble Specific Substance of Pneumococcus. III. M. Heidelberger, W. F. Goebel and O. T. Avery, New York.—p. 727.

Effects of Ethyl Urethane Anesthesia on Blood.—When anesthesia is produced in rabbits or rats by injections of ethyl urethane, the carbon dioxid content and p_H of the whole blood of the animal are more or less rapidly increased to a point where there is a marked uncompensated alkalosis which reaches its maximum at twenty-four hours and persists for forty-eight hours. The increase in the carbon dioxid content and p_H of the whole blood is accompanied by a decrease in the circulating lymphocytes and an increase in the polymorphonuclear leukocytes.

Urobilin Physiology and Pathology.—Further evidence is presented by Elman and McMaster that the intestinal tract is, under ordinary circumstances, the sole place of origin of urobilin. So long as the biliary tract remains sterile the presence of the pigment in bile and urine is entirely dependent on the passage of bile to the intestine. The evidence presented suffices to demonstrate that urobilinuria, occurring during blood destruction, is primarily the result of an increased excretion of bilirubin from which, in turn, an unusually large quantity of urobilin is formed within the intestine. The liver fails to remove from the portal blood all of the latter pigment that is resorbed and consequently some of it reaches the kidneys and urine.

Distribution of Blood in Mammalian Kidney.—The experiments made by Hayman and Starr show that, as a rule, the number of open glomeruli, kidney volume, kidney blood flow and urine elimination vary in the same direction, but there are exceptions to this generalization. A decrease in kidney volume may be accompanied by one of the following vascular phenomena: (*a*) the number of open glomeruli may be reduced, but the average blood flow per glomerulus continues high; (*b*) the number of open glomeruli may remain high, the constriction simply diminishing blood flow through them; (*c*) a reduction in number of open glomeruli may be accompanied by a reduced blood flow through those still remaining open.

Physiologic Response of Circulatory System to Experimental Alterations.—It is suggested by Holman and Beck that the enlargement of the heart seen clinically in so-called "idiopathic hypertrophy," "essential hypertension" and also in certain cases of cardiorenal disease, may be due to an increase in total blood mass following some interference with the mechanism for its control. The seat of this impairment in blood volume control may be: (*a*) in a chemical alteration in the blood; (*b*) in a diseased function of the kidneys which may be responsible for a decreased elimination, or for a change in the chemical composition of the blood, or (*c*) in an abnormal stimulation of the organs producing the cellular elements of the blood.

Effect of Variations in Blood Volume.—Alterations in the peripheral circulatory bed, either by the inhalation of amyl nitrite, or by the intravenous injection of histamin, result in a marked reduction in the size of the heart, due, it is suggested by Beck and Holman, to a decrease in the volume of blood contained in the central circulatory bed incident to a dilatation of the peripheral bed. Contraction of the peripheral vascular bed, either by the intravenous injection of epinephrin or by an acute increase in the intracranial pressure, results in a demonstrable increase in the size of the heart, due, it is suggested, to an increase in the volume of blood contained in the central circulatory bed. Again, variations in the rate of cardiac contraction alone cannot be considered responsible for these variations in the heart size. The size of the heart is commensurate with the volume flow of blood through it, whether the latter is altered by massive blood letting, by massive transfusions, or by a redistribution of the normal blood volume.

Experimental Primary Lung Tumors.—In this study Murphy and Sturm have noted that the external application of tar to a number of separated areas on the skin of mice, in such fashion that no single area is irritated sufficiently long to cause lesions of the skin, has resulted in a very high incidence of lung tumors. This incidence ranged from 60 per cent. in one experiment to 78.3 per cent. in another. Control mice from the same stock but from three to six months older, and for that reason the more susceptible to spontaneous lung tumors, failed to show a single instance of such growths. Even in a stock in which spontaneous lung tumors had been frequent, the incidence for corresponding age periods has never been above 5.5 per cent., while the average has been between 1 and 2 per cent. over a period of years. The tumors in the tar-painted animals occur as small white nodules, either single or multiple. They are typical epithelial neoplasms, identical histologically with those described by previous authors as occurring spontaneously in mice. Some possible factors in the causation of the tumors are discussed.

Polysaccharid in Friedländer's Bacillus.—A method is given by Heidelberger et al. for the isolation of a specifically reacting nitrogen-free polysaccharid from the so-called E strain of Friedländer's bacillus. The properties of this polysaccharid are described.

Heterogenetic Specificity Among Bacteria.—The chemical and immunologic properties of the soluble specific substances of a strain of Friedländer's bacillus and pneumococcus type II are described and correlated by Avery et al. and the serologic and antigenic similarity of these biologically unrelated organisms is discussed as an example of heterogenetic specificity among bacteria.

Journal of General Physiology, Baltimore

9: 123-284 (Nov.) 1925

Studies on Salt Action. X. Influence of Electrolytes on Viability and Electrophoretic Migration of Bacterium Coli. H. J. Shaughnessy and K. I. Criswell, New Haven, Conn.—p. 123.

Electric Capacity of Suspensions with Special Reference to Blood. H. Fricke, Cleveland.—p. 137.

Electric Resistance and Capacity of Blood for Frequencies Between 800 and 4½ Million Cycles. H. Fricke and S. Morse, Cleveland. —p. 153.

Some General Properties of Proteins. M. L. Anson and A. E. Mirsky, Cambridge, England.—p. 169.

Microdissection of Pachytene Threads of Tradescantia Virginica L.: Some Aspects of Mitosis. H. C. Sands, New York.—p. 181.

Carbon Dioxid Excreted in One Minute by One Centimeter of Nerve Fiber. G. H. Parker, Cambridge, Mass.—p. 191.

Shape of Mammalian Erythrocyte: Its Respiratory Function. E. Ponder, Edinburgh, Scotland.—p. 197.

Effect of H Ion Concentration on Availability of Iron for Chlorella Sp. E. F. Hopkins and F. B. Wann, Ithaca, N. Y.—p. 205.

Effect of Radioactive Radiations and Roentgen Rays on Enzymes. IV. Effect of Radium Emanations on Invertase. R. G. Hussey and W. R. Thompson, New York.—p. 211.

Effect of Radiations from Mercury Arc in Quartz on Enzymes. I. Effect of Ultraviolet Radiation on Pepsin. R. G. Hussey and W. R. Thompson, New Haven, Conn.—p. 217.

Roentgen-Ray Diffraction Patterns from Plant Fibers. O. L. Sponsler, Los Angeles.—p. 221.

Accumulation of Brilliant Cresyl Blue in Sap of Living Cells of Nitella in Presence of Ammonia. M. Irwin, New York.—p. 235.

Penetration of Carbon Dioxid into Living Protoplasm. W. J. V. Osterhout and M. J. Dorcas, New York.—p. 255.

Temperature and Heart Rate in Pterotrachea and Tiedemannia. O. Glaser, Amherst, Mass.—p. 269.

Journal of Nervous and Mental Diseases, New York

62: 561-652 (Dec.) 1925

Recent Work on Problem of Psychologic Types. H. Klüver, Minneapolis.—p. 561.

*Dementia Praecox: Conditions Which Might Have Affected Brain Before Onset of Disease. S. Kure and M. Shimoda, Tokyo, Japan. —p. 597.

Mental and Physical Strain (Tension) in Relation to Disease, Notably Chronic Catarrhal Otitis and Eye Defects. La F. Potter, New York. —p. 612.

Dementia Praecox.—A statistical investigation has been made by Kure and Shimoda of various conditions which might have affected the brain before the onset of this disease. Two hundred and seventy-seven patients were studied, being 71.3 per cent of available cases. If twenty-seven men and fifteen women patients, of whom little is known, are excluded, the percentage of abnormal cases would be 80; that is, 80 per cent of dementia praecox patients showed abnormalities previous to the onset of the disease. This fact appears to be more than a mere coincidence. However, as for the exact relationship between abnormal previous conditions and later development of dementia praecox, the data at hand are insufficient to be conclusive.

Michigan State Medical Society Journal, Grand Rapids

24: 641-694 (Dec.) 1925

*Therapeutic Anatomy of Lobar Pneumonia. C. F. McClintic, Detroit. —p. 641.

Acute Nephritis in Children: Relation of Childhood Affections to Kidney in Adult Life. M. Marriott, St. Louis.—p. 650.

Relation of Kidney to Pregnancy Toxemias, Especially Eclampsia. D. S. Hillis, Chicago.—p. 653.

*Cardiac Index—Means of Prognosis in Pulmonary Tuberculosis. H. L. Horwitz and R. W. Dunham, Chicago.—p. 656.

Microbic Origin of Carcinoma. J. Loudon and J. McCormack, Toronto, Canada.—p. 661.

*Case of Amaurotic Idiocy (Juvenile Form). R. C. Moehlig, Detroit. —p. 668.

Preoperative Treatment in Prostatectomy. G. V. A. Brown, Detroit. —p. 669.

Problems of Medical Profession. M. L. Harris, Chicago.—p. 671.

Therapeutic Anatomy of Lobar Pneumonia.—McClintic attempts to show that the lung possesses a peristaltic mechanism. He says that the lung circulation is facilitated by this mechanism owing to its "massage" effect. The respiratory sacs are guarded by sphincters, and these sacs are involved in pneumonia and become spastic. An irritation of the mucous membrane by bacteria and toxins can produce a spasm of the sphincters and peristaltic mechanism. This paralysis, by impeding the circulation and the respiration, accounts for the pathologic and physiologic condition in pneumonia. The sudden passing of the spasm is marked by the crisis, and the resumption of peristaltic activity constitutes resolution. Belladonna compounds should be used to relieve the spasm, and mercurial salts to combat the bacteria by increasing the phagocytic leukocytes. If diathermy proves to be of value it will be because heat has the therapeutic effect of acting as a sedative and relaxing muscle spasms. Cold fresh air is well borne and beneficial in supplying oxygen, and the need of oxygen can be determined by a chemical examination of the blood.

Prognostic Value of Cardiac Index in Pulmonary Tuberculosis.—That the cardiac index has definite value as a method of classifying tuberculous patients, Horwitz and Dunham state, is shown by the fact that of 339 patients in Class A (favorable class), 88.86 per cent improved; of 156 patients in Class B (doubtful class), 50 per cent improved, 26 per cent failed and 24 per cent died; of 205 patients in Class C, 23 per cent failed and 59.4 per cent died. A monthly computation and plotting of the cardiac index is of value to show the progress of the patient.

Amaurotic Family Idiocy, Juvenile Type.—A case of amaurotic family idiocy of the juvenile type is reported by Moehlig in which both parents were feebleminded and their four children were mentally subnormal. The oldest child showed a precociousness in spelling, while the youngest child was an idiot of the juvenile amaurotic type. These facts, Moehlig says, would seem to be an effective argument for sterilization of the feebleminded.

Nebraska State Medical Journal, Norfolk

10: 453-494 (Dec.) 1925

Adenoids and Pharyngeal Bursa. H. B. Lemere, Omaha.—p. 453.
Diagnosis and Treatment of Ductless Gland Disorders. W. Engelbach, St. Louis.—p. 459.
Urinary Antisepsis. E. Davis, Omaha.—p. 466.
Modern Aspects of Nutrition. V. E. Levine, Omaha.—p. 471.
Dietetic Treatment of Diabetes Mellitus. F. L. Rogers, Lincoln.—p. 478.
Prognosis of Early Syphilis. O. W. Martin, Omaha.—p. 480.
*Case of Complete Heart Block. A. L. Smith, Lincoln.—p. 481.

Complete Heart Block.—Smith's case is one of complete heart block in which the auriculoventricular bundle does not function and the auricle and ventricle beat absolutely independently of each other. The patient was 70 years of age and when in bed appeared to be perfectly normal, except for the slow rate of the pulse. As soon as he attempted to stand up, he became dizzy and short of breath.

New Orleans Medical and Surgical Journal

78: 341-418 (Dec.) 1925

Greater Safety for Louisiana Babies. R. T. Lucas, Shreveport.—p. 341.
Infant's Pylorus: Spasm and Stenosis. F. G. Riley, Meridian, Miss.—p. 345.
Syphilis and Effects of Mercurialization in Doubtful Cases. H. E. Gautreaux, Covington.—p. 350
Relationship Between Public Health and Medical Practice. K. E. Miller, New Orleans.—p. 353.
Treatment of Malarial Hematuria. W. G. Kiger, Eaglebend, Miss.—p. 358.
Heart Disease: Causes and Prevention. G. S. Bel, New Orleans.—p. 360.
Digestive System in Tuberculosis. W. A. Toomer, Sanatorium, Miss.—p. 368.
Tuberculosis: How to Reduce Death Rate in Louisiana. C. R. Gowen, Shreveport.—p. 374.
Mental Deviation and Criminalism. C. P. May and M. H. May, Jackson.—p. 383.
Blood Transfusion. A. O. Bryan, Meridian, Miss.—p. 387.
Old Age: Its Cause and Prevention. S. Hobson, New Orleans.—p. 391.
Conclusions from Correlation of Laboratory Findings, Clinical Symptoms, End-Results in Tonsillectomy. L. S. Lippincott, Vicksburg, Miss.—p. 395.

Radiology, St. Paul

5: 459-546 (Dec.) 1925

Radiologic Considerations of Gastroduodenal Anatomy and Physiology. J. Cunha, Montevideo, Uruguay.—p. 459.
Determination of Quantity and Quality of Roentgen Rays. E. C. Ernst, St. Louis.—p. 468.
*Stasis in Ascending Colon Simulating Chronic Appendicitis. T. D. Cunningham, Denver.—p. 480.
*Metastasis to Bones from Carcinoma of Breast: Roentgenologic Study. H. W. Meyerding, R. D. Carman and J. D. Garvin, Rochester, Minn.—p. 486.
Compression Fractures of Spine: Roentgen-Ray Diagnosis. L. R. Santé and L. G. McCutchen, St. Louis.—p. 490.
*Sarcoma Complicating Osteitis Deformans; Two Cases. J. D. Camp, Boston.—p. 495.
Results of Roentgen-Ray Therapy in Carcinoma of Cervix of Uterus. H. Wintz, Erlangen, Germany.—p. 500.
Radioactive Substances: Therapeutic Uses. J. Muir, New York.—p. 509.
Normal and Pathologic Appendix: Roentgenologic Study. R. A. Arens and A. R. Bloom, Chicago.—p. 513.
First Three Essentials in Development of Roentgen-Ray Art. E. C Jerman, Chicago.—p. 520.
Multiple Diverticula, with Hemorrhage, in Wall of Stomach. C. H. Sutherland, Rochester, Minn.—p. 523.
Fibroid Uterus with Bladder Complications. L. J. Carter, Brandon, Manitoba.—p. 524.
Necropsy of Roentgenologist (Dr. S. P. Grigorjey). E. C. Piette, Oak Park, Ill.—p. 525.
Endothelioma of Pleura; Case. F. W. Gaarde and C. G. Sutherland, Rochester, Minn.—p. 526.

Intestinal Stasis.—Cunningham asks: "How many of the digestive troubles of adult life have their beginning in infancy and are the result of prolonged, though at times minute, disturbances of physiology?" He believes that the correct solution of this problem can be reached only by a study of the gastro-intestinal tract from infancy to adult life in a given person. He is carrying out this study by means of repeated roentgen-ray examinations, beginning in infancy with physical and laboratory examination, clinical history and study of environmental conditions and habits. These children are selected from families in all walks of life and living under various conditions. The factors that apparently tend to promote stasis in the ascending colon and cecum are: too rapid dehydration of the intestinal contents, probably caused by lack of sufficient roughage in the diet; a poorly balanced vitamin content; insufficient exercise of the abdominal muscles, and the increasing nervous strain and consequent fatigue of modern living. When adult patients whose digestions have been normal without any symptoms referable to the gastro-intestinal tract begin to have symptoms of indigestion, in the absence of other pathologic changes, the roentgen ray usually discloses a stasis in the cecum and ascending colon, although the patients say their bowels have moved daily without assistance. These people usually are completely relieved by simple regulation of diet, rest and sufficient fluids. The symptoms suggest a chronic appendicitis: there is tenderness over the distended cecum, and appendectomy may cure or may give temporary relief. Unless properly treated medically, these cases become surgical, then again medical, while the cecum and ascending colon remain distended and the gastro-intestinal symptoms continue. Cunningham says that there are undoubtedly other factors responsible for indigestion, but careful attention to this part of the alimentary tract may save unnecessary operation, and those patients already operated on unsuccessfully may be relieved of a condition that tends to grow worse.

Metastasis to Bones from Breast Carcinoma.—Among 1,985 cases of carcinoma of the breast reviewed by Meyerding, Carman and Garvin, metastasis to the bones had occurred in sixty-seven cases. The axillary glands were found to be affected in forty cases, the supraclavicular glands in three, both supraclavicular and axillary glands in six, and the chest wall in two, making a total of fifty-three cases in which there was glandular involvement. In order of frequency the bones involved were: pelvis, twenty-six cases; femur, twenty-three cases; lumbar spine, twenty-one cases; ribs, eighteen cases; dorsal spine, eleven cases; cervical spine, four cases; clavicle, four cases; scapula, four cases; sacrum, four cases; cranium, two cases; tibia and sternum, one case each. There was multiple involvement of the bone in forty-three of the sixty-seven cases. The authors urge that in every patient with carcinoma of the breast, and without a definite history of carcinoma of the breast, who complains of "rheumatic" or "sciatic" pain, the possibility of metastasis to bone should be considered.

Sarcoma Complicating Osteitis Deformans.—One of Camp's cases showed an osteogenic sarcoma of the left femur superimposed on Paget's disease. The second case was one of osteitis deformans with superimposed sarcoma of the left humerus.

Rhode Island Medical Journal, Providence

8: 193-208 (Dec.) 1925

Sacral Anesthesia. W. Pickles, Providence.—p. 193.
Mastoiditis. H. E. Blanchard, Providence.—p. 197.
Industrial Medicine. J. F. Kenney, Pawtucket.—p. 203.

Southern Medical Journal, Birmingham, Ala.

18: 859-924 (Dec.) 1925

William C. Gorgas of Alabama. S. R. Roberts, Atlanta, Ga.—p. 859.
What Is Surgery? E. A. Graham, St. Louis.—p. 864.
Surgery in South. I. Abell, Louisville, Ky.—p. 867.
Multiple Stage Operations in Urologic Surgery. H. G. Bugbee, Buffalo.—p. 871.
*Ureteral Kinks: Incidence and Significance. G. R. Livermore, Memphis, Tenn.—p. 875.
Diagnosis in Obstetrics. J. R. Garber, Birmingham.—p. 877.
Allergy and Anaphylaxis in Dermatology. O. S. Ormsby, Chicago.—p. 881.
*Rights of Newly Born. L. R. De Buys, New Orleans.—p. 889.
Future of Dermatology. I. L. McGlasson, San Antonio, Texas.—p. 891.
Future of Neuropsychiatry. M. A. Bliss, St. Louis.—p. 894.
What Price Health? W. D. Haggard, Nashville, Tenn.—p. 896.
Relation of State Association to Southern Medical Association. A. H. Bunce, Atlanta, Ga.—p. 900.

Ureteral Kinks.—Livermore has found that ureteral kinks occur in about 10 per cent of urologic cases. They may be congenital or acquired. The acquired form is due to inflammatory elongation of the ureter, to a floating kidney or both, or to an aberrant vessel with one or both of the foregoing. The treatment is primarily nonsurgical, surgery being reserved for those cases in which other methods have failed.

Rights of Newly Born.—De Buys urges that daily observations of the newly born should be made, beginning from the time the cord is tied. The nearer birth this supervision is begun, the better for the infant. The temperature and the weight curve should be observed closely, as they frequently give the first indication of impending trouble. It should be remembered that the greater the loss of weight, the less the resistance of the individual; and if to this diminished resistance is added an infection, a digestive disturbance or an organic disease (as, for example, a hypertrophic pyloric stenosis), the infant's chances are materially diminished. Excessive losses in weight should, therefore, be avoided as much as possible. In order to prevent an unnecessary loss in weight, the feeding of the infant must be conducted efficiently. With a daily observation of the temperature, the weight curve, supervision of the breasts, daily inspection of the infant's stools and a thorough knowledge of the diseases of the newly born, it is hardly likely that any condition will be overlooked and the newly born will receive his just deserts.

Texas State Journal of Medicine, Fort Worth

21: 397-458 (Nov.) 1925

Relation of Live Stock Sanitary Commission to Public Health. N. F. Williams, Fort Worth.—p. 411.
Value of Physical Examinations in Industry. J. N. Redfern, Chicago.—p. 414.
Tryparsamide in Neurosyphilis. T. H. Harris, Galveston.—p. 417.
Synergistic Anesthesia in Obstetrics. F. A. Pierce, Dallas.—p. 419.
Scopolamin-Apomorphin Amnesia in Obstetrics. L. A. LeDoux, New Orleans.—p. 421.
Postoperative Care of Gynecologic Cases. E. W. Bertner, Houston.—p. 426.
*Cardiac Infarct and Coronary Sclerosis. G. Werley, El Paso.—p. 428.
Meningitis. N. D. Buie and T. G. Glass, Marlin.—p. 433.
History of Radiology. R. T. Wilson, Temple.—p. 435.
Neuritis of Trifacial Nerves J. M. Murphy, Temple.—p. 438.
Zinc Ionization Treatment of Otitis Media. H. L. Warwick and H. M. Stevenson, Fort Worth.—p. 442.

Cardiac Infarct and Coronary Sclerosis.—The Clinical and Pathological Club of El Paso has done 200 necropsies during the last two years, and in 25 per cent of the cases found badly diseased hearts and aortas. Four per cent showed cardiac infarct or cardiac aneurysm. There were three cases of rupture of the left ventricle, following coronary obstruction. In two specimens the right coronary artery was completely occluded, and in a third case the right coronary artery was almost closed at its orifice. There were five cases showing cardiac aneurysm, which was due to syphilis. Werley says that it has been their experience that well marked lesions will be overlooked unless the examination is done in detail and includes opening of the coronaries and histologic studies.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

1: 1-72 (Dec.) 1925

*Giardiasis (Lambliasis); Five Cases. M. B. Marcellus, Portland, Ore.—p. 1.
*Mucor Infection of Lungs Followed by Pulmonary Tuberculosis. H. Freed and J. B. Webb, San Antonio, Texas.—p. 7.
*Speech Defects in Psychoneurotics. C. B. Covey, Waukesha, Wis.—p. 10.
*Report of Case of Self-Mutilation. H. W. McAdoo, Little Rock, Ark.—p. 13.
*Treatment of Raynaud's Disease by Negative Pressure. R. S. Crichlow, New Orleans.—p. 14.
*Five Cases of Thrombo-Angiitis Obliterans. J. A. Thurston, Kansas City, Mo.—p. 18.
Physiotherapy in Treatment of Tuberculosis: Certain Laboratory Findings Relating to Physiologic Action of Ultraviolet Rays on Blood Chemistry. F. A. Davis, New Haven, Conn.—p. 22.
Plea for Colonization of Arrested Cases of Pulmonary Tuberculosis on Forest Reserve Lands. Addison M. Rothrock, Legion, Texas.—p. 30.
Preparation of Histories. D. B. Virtue, Algiers, La.—p. 34.
*Hemophilia in Dental Surgery: Report of Case. L. W. Park, Thomas, Ky.—p. 38.

Giardiasis.—Marcellus reports five cases presenting the usual symptoms, those of an acute or chronic enterocolitis or cholecystitis: viz., diarrhea of various degrees, or occasionally constipation and irregular bowel movements; pain and tenderness in the upper part of the abdomen at the costal margin, and in both sides, sometimes more pronounced on the right side than on the left; nausea on eating and occasionally vomiting; general loss of weight; weakness, and neurasthenia. Duodenobiliary drainage in four of these cases revealed many motile flagellates in the bile, and examination of the stools showed numerous ova and cysts of *Giardia intestinalis.*

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Thrombo-Angiitis Obliterans.—All five cases reported by Thurston occurred in white Gentiles. All five had oral infection. Every form of treatment was tried in these cases, though not all forms in each individual case; hot and cold accounts for the pathologic and physiologic condition in pneumonia. The sudden passing of the spasm is marked by the crisis, and the resumption of peristaltic activity constitutes resolution. Belladonna compounds should be used to relieve the spasm, and mercurial salts to combat the bacteria by increasing the phagocytic leukocytes. If diathermy proves to be of value it will be because heat has the therapeutic effect of acting as a sedative and relaxing muscle spasms. Cold fresh air is well borne and beneficial in supplying oxygen, and the need of oxygen can be determined by a chemical examination of the blood

Prognostic Value of Cardiac Index in Pulmonary Tuberculosis.—That the cardiac index has definite value as a method of classifying tuberculous patients, Horwitz and Dunham state, is shown by the fact that of 339 patients in Class A (favorable class), 88 86 per cent improved; of 156 patients in Class B (doubtful class), 50 per cent improved, 26 per cent failed and 24 per cent died; of 205 patients in Class C, 23 per cent failed and 59.4 per cent died. A monthly computation and plotting of the cardiac index is of value to show the progress of the patient.

Amaurotic Family Idiocy, Juvenile Type.—A case of amaurotic family idiocy of the juvenile type is reported by Moehlig in which both parents were feebleminded and their four children were mentally subnormal. The oldest child showed a precociousness in spelling, while the youngest child was an idiot of the juvenile amaurotic type. These facts, Moehlig says, would seem to be an effective argument for sterilization of the feebleminded.

Nebraska State Medical Journal, Norfolk

10: 453 494 (Dec) 1925

Adenoids and Pharyngeal Bursa H B Lemere, Omaha —p 453
Diagnosis and Treatment of Ductless Gland Disorders W Engelbach, St Louis —p 459.
Urinary Antisepsis E Davis, Omaha —p 466
Modern Aspects of Nutrition V E Levine, Omaha —p. 471
Dietetic Treatment of Diabetes Mellitus F L Rogers, Lincoln —p. 478.
Prognosis of Early Syphilis O W Martin, Omaha —p 480
*Case of Complete Heart Block. A L Smith, Lincoln —p. 481

Complete Heart Block.—Smith's case is one of complete heart block in which the auriculoventricular bundle does not function and the auricle and ventricle beat absolutely independently of each other. The patient was 70 years of age and when in bed appeared to be perfectly normal, except for the slow rate of the pulse. As soon as he attempted to stand up, he became dizzy and short of breath

New Orleans Medical and Surgical Journal

78: 341 418 (Dec) 1925

Greater Safety for Louisiana Babies R T Lucas, Shreveport —p 341.
Infant's Pylorus. Spasm and Stenosis F G Riley, Meridian, Miss —p 345
Syphilis and Effects of Mercurialization in Doubtful Cases H. E. Gautreaux, Covington —p 350
Relationship Between Public Health and Medical Practice. K E. Miller, New Orleans —p. 353
Treatment of Malarial Hematuria W. G Kiger, Eaglebend, Miss —p 358.
Heart Disease. Causes and Prevention G S Bel, New Orleans.—p. 360.
Digestive System in Tuberculosis W A Toomer, Sanatorium, Miss. —p 368
Tuberculosis How to Reduce Death Rate in Louisiana. C R Gowen, Shreveport.—p 374
Mental Deviation and Criminalism. C. P May and M H May, Jackson. —p 383
Blood Transfusion A O Bryan, Meridian, Miss —p 387.
Old Age· Its Cause and Prevention S Hobson, New Orleans —p 391
Conclusions from Correlation of Laboratory Findings, Clinical Symptoms, End Results in Tonsillectomy L S. Lippincott, Vicksburg, Miss. —p 395.

Radiology, St. Paul

5: 459 546 (Dec) 1925

Radiologic Considerations of Gastroduodenal Anatomy and Physiology. J. Cunha, Montevideo, Uruguay —p 459.
Determination of Quantity and Quality of Roentgen Rays E. C. Ernst, St Louis —p 468
*Stasis in Ascending Colon Simulating Chronic Appendicitis T. D. Cunningham, Denver —p 480.
*Metastasis to Bones from Carcinoma of Breast: Roentgenologic Study. H. W. Meyerding, R D. Carman and J. D. Garvin, Rochester, Minn. —p. 486.
Compression Fractures of Spine: Roentgen-Ray Diagnosis. L. R. Santé and L. G. McCutchen, St. Louis.—p. 490.
*Sarcoma Complicating Osteitis Deformans; Two Cases J. D. Camp, Boston —p. 495.
Results of Roentgen-Ray Therapy in Carcinoma of Cervix of Uterus. H. Wintz, Erlangen, Germany.—p. 500.
Radioactive Substances: Therapeutic Uses J. Muir, New York —p 509.
Normal and Pathologic Appendix: Roentgenologic Study. R. A. Arens and A. R. Bloom, Chicago —p. 513.
First Three Essentials in Development of Roentgen Ray Art. E. C Jerman, Chicago —p. 520.
Multiple Diverticula, with Hemorrhage, in Wall of Stomach. C. H. Sutherland, Rochester, Minn.—p. 523.
Fibroid Uterus with Bladder Complications. L J. Carter, Brandon, Manitoba.—p. 524.
Necropsy of Roentgenologist (Dr. S P. Grigorjev). E C. Piette, Oak Park, Ill —p. 525.
Endothelioma of Pleura; Case. F. W. Gaarde and C. G. Sutherland, Rochester, Minn.—p 526

Intestinal Stasis.—Cunningham asks: "How many of the digestive troubles of adult life have their beginning in infancy and are the result of prolonged, though at times minute, disturbances of physiology?" He believes that the correct solution of this problem can be reached only by a study of the gastro-intestinal tract from infancy to adult life in a given person He is carrying out this study by means of repeated roentgen-ray examinations, beginning in infancy with physical and laboratory examination, clinical history and study of environmental conditions and habits. These children are selected from families in all walks of life and living under various conditions. The factors that apparently tend to promote stasis in the ascending colon and cecum are: too rapid dehydration of the intestinal contents, probably caused by lack of sufficient roughage in the diet; a poorly balanced vitamin content; insufficient exercise of the abdominal muscles, and the increasing nervous strain and consequent fatigue of modern living. When adult patients whose digestions have been normal without any symptoms referable to the gastro-intestinal tract begin to have symptoms of indigestion, in the absence of other pathologic changes, the roentgen ray usually discloses a stasis in the cecum and ascending colon, although the patients say their bowels have moved daily without assistance. These people usually are completely relieved by simple regulation of diet, rest and sufficient fluids. The symptoms suggest a chronic appendicitis; there is tenderness over the distended cecum, and appendectomy may cure or may give temporary relief. Unless properly treated medically, these cases become surgical, then again medical, while the cecum and ascending colon remain distended and the gastro-intestinal symptoms continue. Cunningham says that there are undoubtedly other factors responsible for indigestion, but careful attention to this part of the alimentary tract may save unnecessary operation, and those patients already operated on unsuccessfully may be relieved of a condition that tends to grow worse.

Metastasis to Bones from Breast Carcinoma.—Among 1,985 cases of carcinoma of the breast reviewed by Meyerding, Carman and Garvin, metastasis to the bones had occurred in sixty-seven cases. The axillary glands were found to be affected in forty cases, the supraclavicular glands in three, both supraclavicular and axillary glands in six, and the chest wall in two, making a total of fifty-three cases in which there was glandular involvement. In order of frequency the bones involved were: pelvis, twenty-six cases; femur, twenty-three cases; lumbar spine, twenty-one cases; ribs, eighteen cases; dorsal spine, eleven cases; cervical spine, four cases; clavicle, four cases; scapula, four cases; sacrum, four cases; cranium, two cases; tibia and sternum, one case each. There was multiple involvement of the bone in forty-three of the sixty-seven cases. The authors urge that in every patient with carcinoma of the breast, and without a definite history of carcinoma of the breast, who complains of "rheumatic" or "sciatic" pain, the possibility of metastasis to bone should be considered

Sarcoma Complicating Osteitis Deformans.—One of Camp's cases showed an osteogenic sarcoma of the left femur superimposed on Paget's disease. The second case was one of osteitis deformans with superimposed sarcoma of the left humerus.

Rhode Island Medical Journal, Providence

8: 193-208 (Dec.) 1925

Sacral Anesthesia. W. Pickles, Providence.—p. 193.
Mastoiditis. H. E. Blanchard, Providence.—p. 197.
Industrial Medicine. J. F. Kenney, Pawtucket.—p. 203.

Southern Medical Journal, Birmingham, Ala.

18: 859-924 (Dec.) 1925

William C. Gorgas of Alabama. S. R. Roberts, Atlanta, Ga.—p. 859.
What Is Surgery? E. A. Graham, St. Louis.—p. 864.
Surgery in South. I. Abell, Louisville, Ky.—p. 867.
Multiple Stage Operations in Urologic Surgery. H. G. Bugbee, Buffalo.—p. 871.
*Ureteral Kinks: Incidence and Significance. G. R. Livermore, Memphis, Tenn.—p. 875.
Diagnosis in Obstetrics. J. R. Garber, Birmingham.—p. 877.
Allergy and Anaphylaxis in Dermatology. O. S. Ormsby, Chicago.—p. 881.
*Rights of Newly Born. L. R. De Buys, New Orleans.—p. 889.
Future of Dermatology. I. L. McGlasson, San Antonio, Texas.—p. 891.
Future of Neuropsychiatry. M. A. Bliss, St. Louis.—p. 894.
What Price Health? W. D. Haggard, Nashville, Tenn.—p. 896.
Relation of State Association to Southern Medical Association. A. H. Bunce, Atlanta, Ga.—p. 900.

Ureteral Kinks.—Livermore has found that ureteral kinks occur in about 10 per cent of urologic cases. They may be congenital or acquired. The acquired form is due to inflammatory elongation of the ureter, to a floating kidney or both, or to an aberrant vessel with one or both of the foregoing. The treatment is primarily nonsurgical, surgery being reserved for those cases in which other methods have failed.

Rights of Newly Born.—De Buys urges that daily observations of the newly born should be made, beginning from the time the cord is tied. The nearer birth this supervision is begun, the better for the infant. The temperature and the weight curve should be observed closely, as they frequently give the first indication of impending trouble. It should be remembered that the greater the loss of weight, the less the resistance of the individual; and if to this diminished resistance is added an infection, a digestive disturbance or an organic disease (as, for example, a hypertrophic pyloric stenosis), the infant's chances are materially diminished. Excessive losses in weight should, therefore, be avoided as much as possible. In order to prevent an unnecessary loss in weight, the feeding of the infant must be conducted efficiently. With a daily observation of the temperature, the weight curve, supervision of the breasts, daily inspection of the infant's stools and a thorough knowledge of the diseases of the newly born, it is hardly likely that any condition will be overlooked and the newly born will receive his just deserts.

Texas State Journal of Medicine, Fort Worth

21: 397-458 (Nov.) 1925

Relation of Live Stock Sanitary Commission to Public Health. N. F. Williams, Fort Worth.—p. 411.
Value of Physical Examinations in Industry. J. N. Redfern, Chicago.—p. 414.
Tryparsamide in Neurosyphilis. T. H. Harris, Galveston.—p. 417.
Synergistic Anesthesia in Obstetrics. F. A. Pierce, Dallas.—p. 419.
Scopolamin-Apomorphin Amnesia in Obstetrics. L. A. LeDoux, New Orleans.—p. 421.
Postoperative Care of Gynecologic Cases. E. W. Bertner, Houston.—p. 426.
*Cardiac Infarct and Coronary Sclerosis. G. Werley, El Paso.—p. 428.
Meningitis. N. D. Buie and T. G. Glass, Marlin.—p. 433.
History of Radiology. R. T. Wilson, Temple.—p. 435.
Neuritis of Trifacial Nerves J. M. Murphy, Temple.—p. 438.
Zinc Ionization Treatment of Otitis Media. H. L. Warwick and H. M. Stevenson, Fort Worth.—p. 442.

Cardiac Infarct and Coronary Sclerosis.—The Clinical and Pathological Club of El Paso has done 200 necropsies during the last two years, and in 25 per cent of the cases found badly diseased hearts and aortas. Four per cent showed cardiac infarct or cardiac aneurysm. There were three cases of rupture of the left ventricle, following coronary obstruction. In two specimens the right coronary artery was completely occluded, and in a third case the right coronary artery was almost closed at its orifice. There were five cases showing cardiac aneurysm, which was due to syphilis. Werley says that it has been their experience that well marked lesions will be overlooked unless the examination is done in detail and includes opening of the coronaries and histologic studies.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

1: 1-72 (Dec.) 1925

*Giardiasis (Lambliasis); Five Cases. M. B. Marcellus, Portland, Ore.—p. 1.
*Mucor Infection of Lungs Followed by Pulmonary Tuberculosis. H. Freed and J. B. Webb, San Antonio, Texas.—p. 7.
*Speech Defects in Psychoneurotics. C. B. Covey, Waukesha, Wis.—p. 10.
*Report of Case of Self-Mutilation. H. W. McAdoo, Little Rock, Ark.—p. 13.
*Treatment of Raynaud's Disease by Negative Pressure. R. S. Crichlow, New Orleans.—p. 14.
*Five Cases of Thrombo-Angiitis Obliterans. J. A. Thurston, Kansas City, Mo.—p. 18.
Physiotherapy in Treatment of Tuberculosis: Certain Laboratory Findings Relating to Physiologic Action of Ultraviolet Rays on Blood Chemistry. F. A. Davis, New Haven, Conn.—p. 22.
Plea for Colonization of Arrested Cases of Pulmonary Tuberculosis on Forest Reserve Lands. Addison M. Rothrock, Legion, Texas.—p. 30.
Preparation of Histories. D. B. Virtue, Algiers, La.—p. 34.
*Hemophilia in Dental Surgery: Report of Case. L. W. Park, Thomas, Ky.—p. 38.

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Thrombo-Angiitis Obliterans.—All five cases reported by Thurston occurred in white Gentiles. All five had oral infection. Every form of treatment was tried in these cases, though not all forms in each individual case; hot and cold applications, injections of salines and sodium citrate intravenously, Locke's solution, Ringer's solution, typhoid vaccine, vessel exercise, ligation of the femoral vein, arteriovenous anastomosis, periarterial sympathectomy and amputation. However, amputation was the only form of treatment that met with any measure of success.

Hemophilia in Dental Surgery.—A case of diathetic hemorrhage which, by its persistence, incited the use of a great variety of popular measures of treatment is recounted by Park. The patient bled for nine days after the extraction of two teeth. Every known remedy for this condition was tried and failed. The quantity of blood lost each day was not great, but the condition had not apparently yielded to treatment. On the tenth day, however, the first signs of resolution of tissue in the socket were visible and a marked decrease in bleeding was observed. At this time there was an anaphylaxis; the reaction of the serums the man had been given and the urticarial wheals which formed on his arms, legs and face gave him great discomfort. On the eleventh day the bleeding had nearly ceased and on the twelfth day entirely so, and the socket healed rapidly.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

32: 734-780 (Nov.) 1925

"Mental Invalids." II. Clinical Examination. C. C. Easterbrook.—p. 734.
Eighteenth Century Neurologist (Robert Whytt). J. D. Comrie.—p. 755.
Oxyuris Ova in Appendix. H. A. Lediard.—p. 762.
*Effect of Antiscarlatinal Serum in Erythema Nodosum. G. H. Percival.—p. 763.

Antiscarlatinal Serum in Erythema Nodosum.—Percival's patient, aged 2 years and 4 months, had been suffering from whooping cough and bronchopneumonia. After eight weeks, a rash appeared on the limbs and trunk, including the neck, and on the forehead and eyelids. Accompanying the rash there was some lacrimation and slight congestion of the conjunctivae; the soft palate and the tonsils were slightly congested, with a suspicion of punctation on the former, and the tongue was covered with a thin white fur. There was no enlargement of the suboccipital or axillary glands. The case was regarded as possibly one of scarlet fever. The Dick test was performed and the result was positive. On the ninth day after the appearance of the rash, erythema nodosum developed. The nodules were distributed bilaterally, on the shins, calves and forearms. The nodules became purplish two days later, and gradually faded with the appearance of bruising. Seven days from their first appearance, all that remained to mark their existence was slight thickening at the site of each nodule, and a return of the purple tint when the limb was dependent. No phlyctenules or subungual hemorrhages accompanied the erythema nodosum, and there was no synovial involvement. Generalized desquamation did not take place. The Dick test, repeated fourteen days after its first application, proved negative. A few hours after the development of erythema nodosum, 0.3 c.c. of antistreptococcal (scarlatina) serum was injected intradermally into one of the nodules. Seventeen hours afterward a pale area was evident around the site of the injection, and was even more distinct after twenty-four hours. Bruising did not occur in this ring of pallor, though it appeared at the periphery of the nodule, and this pale area was discernible for six days. The diagnosis of erythema nodosum was confirmed by two experienced clinicians, and the mode of healing with the appearance of bruising bore out the diagnosis. Lastly, a similar amount of serum from the same sample was injected in two cases of typical scarlet fever, in two of rubella, and in an erythema caused by the sun; in the scarlet fever cases a definite Schultz-Charlton reaction was obtained after seventeen hours; in the other cases, nothing happened. The ring of pallor that developed at the site of the injection in the erythema nodosum was corroborated by several observers.

Glasgow Medical Journal

22: 241-296 (Nov.) 1925

Symptomatology of Disturbances of Visual Function. A. M. Ramsay.—p. 241.
Some Old Tendencies in Medicine. J. D. Comrie.—p. 259.
*Fatal Anemia at an Unusually Early Age. A. S. Barr.—p. 272.

Fatal Anemia at Early Age.—Barr relates the case of a boy, aged 16, who had a history of progressive weakness of three months' duration with increasing pallor of the skin for five months. When admitted, his skin was distinct lemon yellow, and weakness, shortness of breath, abdominal pain and occasional sickness were the chief symptoms. The subcutaneous fat was well preserved. Glossitis was never present, and although the bowels moved freely, diarrhea was not a feature. There were no hemorrhages, apart from a few petechial spots on the arms during the severest part of the illness, and a small traumatic hemorrhage when the Ryle tube was passed. Throughout the illness, slight pyrexia from (99 to 100 F.) was almost a constant feature. On admission, blood examination showed: red cells, 770,000 per cubic millimeter; white cells, 5,600 per cubic millimeter; hemoglobin, 22 per cent; color index, 1.6; anisocytosis (with many macrocytes) and poikilocytosis; no nucleated red cells. A fractional test meal showed a condition which practically amounted to achlorhydria. Five weeks after admission, in spite of vigorous treatment, the boy was very much weaker. The blood examination at this time showed: red cells, 420,000 per cubic millimeter; hemoglobin, 10 per cent; color index, 1.25. The boy died two months after admission to the hospital. The question is whether this was a case of true pernicious (Addison's) anemia, or an anemia of aplastic type.

Irish Journal of Medical Science, Dublin

503-554 (Nov.) 1925

Roentgen-Ray Diagnosis of Gallbladder Disease. J. A. Geraghty.—p. 508.
*Maternal Mortality of the United States. R. E. Tottenham.—p. 516.
Iodin in Treatment of Goiter. C. H. Mayo.—p. 530.

Maternal Mortality in Hospitals of United States.—Tottenham gives data on the maternal mortality in many American hospitals that are of interest: Toronto General Hospital, 1,293 deliveries, maternal mortality, 1 per cent.; Burnside Hospital, Toronto, 6,982 deliveries, maternal mortality, 1.2 per cent.; Jefferson Hospital, Philadelphia, 1,433 deliveries in four years, maternal mortality for the four years, 2.3 per cent.; Boston Lying-In Hospital, 1,133 deliveries, maternal mortality, 2.2 per cent.; General Hospital, Minneapolis, 1,263 deliveries, maternal mortality less than 1 per cent.; Swedish Private Hospital, Minneapolis, 982 deliveries, maternal mortality, 0.4 per cent.; Bellevue and Associated Hospitals, New York, 4,286 deliveries, maternal mortality, 2.5 per cent.; Montreal Maternity, 1,354 deliveries, maternal mortality, 0.5 per cent.; Johns Hopkins Hospital, 875 deliveries, maternal mortality, 0.7 per cent.; Cook County Hospital, Chicago, 3,378 deliveries, maternal mortality, 3.6 per cent.; New York Lying-In Hospital, 3,511 deliveries, maternal mortality, 0.9 per cent. Tottenham also says that many of these hospital reports are arranged in a very confusing form, and are by no means easy to interpret. The Cook County Hospital report was the most difficult.

Japanese Journal of Medical Sciences, Tokyo

1: 1-110 (1925)

Serologic Investigation of Relationship of Various Cetacea. N. Fuse.—p. 1.
Studies on Synovia. N. Fuse.—p. 5.
Physiologic Significance of Divisions of Cetacean Stomach. M. Takata.—p. 11.
Physicochemical Properties of Urine of Cetacea. S. Morimura.—p. 25.
Contents of Cysts of Seminal Tracts; Fluid Collections in Uterus. K. Okazaki.—p. 29.
Nature of Ambergris. M. Suzuki.—p. 31.
Composition of Blood of Cetacea. Y. Okahara.—p. 43.
Chemistry of Flesh of Cetacea. M. Suzuki.—p. 49.
Nature of Peritoneal Fluid of Cetacea. N. Fuse.—p. 51.
Sugar Content of Cetacean Blood. Y. Masumizu.—p. 55.
Composition of Tendons and Sclerae of Cetacea. S. Oikawa.—p. 61.
Blood of Cetaceans. M. Suzuki.—p. 71.
Pancreas or Enzymes of Cetacea. M. Takata.—p. 73.
Joint Cartilage of Cetacea. S. Oikawa.—p. 91.
Amniotic Fluid of Cetacea. M. Suzuki.—p. 97.
Biochemistry of Urine of Various Mammals. N. Fuse.—p. 103.

Japan Medical World, Tokyo

5: 275-308 (Oct. 15) 1925

*Influences of Constituents of Thymus Gland Cells on Growth of Young Organism. Y. Miyagawa and K. Wada.—p. 275.
*Surgical Treatment of Bronchial Asthma. F. Ishiyama.—p. 289.

Influence of Thymus Cell Constituents on Growth.—When the cell constituents of a calf's thymus gland are introduced into the peritoneal cavity of young rats or dogs, the growth, development and differentiation of the animal are influenced. Miyagawa and Wada believe that there is a direct action of these cell constituents which are absorbed in the blood circulation on the cells of living thymus or thyroid, facilitating or retarding function, and influencing growth and development. They believe that they have proved the presence of direct action by animal experiments. This direct action is not absolutely specific, however; it is only relatively specific, but the stimulus is very adequate and effective.

Surgical Treatment of Bronchial Asthma.—Ishiyama's clinical experience convinces him that the resection of the cervical sympathetic nerve, as done by Kümmel, does not give relief from bronchial asthma. On the other hand, Freund's operation of costal cartilage resection has marked effects on bronchial asthmatic patients who have dilatation of the chest wall. The effects of Freund's operation become more marked as time passes.

Journal of Anatomy, London

110: 1-120 (Oct.) 1925

Facial Muscles: Modiolus and Muscles Surrounding Rima Oris; Panniculus Adiposus. G. H. S. Lightoller.—p. 1.
Cortical Lamination of Tarsus. H. H. Woollard.—p. 86.
Septdigitate Foot in Man. G. Harrower.—p. 106.
Organ of Jacobson in Horse, Ox, Camel and Pig. F. C. Minett.—p. 110.
*Case of Tortuosity of Internal Carotid Artery. A. R. Cadarso and J. J. B. Goyanes.—p. 119.

Tortuous Internal Carotid.—In the case reported by Cadarso and Goyanes, the left internal carotid artery, 1 cm. below the inferior opening of the carotid canal, was disposed in a complete coil in the sagittal plane and was comparable in appearance with the coiled part of a manometer tube.

Journal of Mental Science, London

71: 631-874 (Oct.) 1925

Investigation of Some Causes of Insanity. F. W. Mott.—p. 631.
Lethargic Encephalitis: Psychologic Implications. G. A. Auden.—p. 647.
Incidence of Chronic Infective Processes in Mental Disorder. T. C. Graves.—p. 658.
Delinquency. W. A. Potts.—p. 675.
Psychopathic Personality. M. H. Smith.—p. 683.
Institutional Treatment of Mental Defectives. A. M. McCutcheon.—p. 694.
Iodin Content of Thyroid Gland. F. A. Pickworth.—p. 703.
Methods of Photographing Spirochaeta Pallida in General Paralysis. R. M. Clark.—p. 721.
Luminal in Epilepsy. G. W. T. H. Fleming.—p. 722.
Case of Cerebral Tumor. W. L. Forsyth.—p. 729.
Case of Unilateral Hydrocephalus. F. Noronha.—p. 729.

Journal of State Medicine, London

33: 501-550 (Nov.) 1925

Climate and Disease *Incidence in India: Leprosy, Phthisis,* Pneumonia and Smallpox. L. Rogers.—p. 501.
Routine Pathologic Examination as Applied to Physiologically Inefficient Aviators. H. E. Whittingham.—p. 511.

Kenya Medical Journal, Nairobi, East Africa

2: 185-214 (Oct.) 1925

Tsetse Fly Control in Kenya. C. B. Symes.—p. 191.
Interview with Meru Witch Doctor. C. M. Vernon.—p. 210.
Belladonna Poisoning by Seeds of Datura Conigera. G. V. W. Anderson.—p. 213.

Lancet, London

2: 1003-1046 (Nov. 14) 1925

*Specific Character of Malignant Neoplasia. W. B. Bell.—p. 1003.
Gastrojejunostomy. J. Sherren.—p. 1007.
*Investigation of Mercurochrome. A. T. Todd.—p. 1017.
Novasural: New Diuretic. A. R. Gilchrist.—p. 1019.

Character of Malignant Neoplasia.—Bell says that malignant neoplasia is a specific growth process in that it is a reversion on the part of the starving cell to the nutriment seeking proclivities of its ancestral type, the chorionic epithelium. A comparison between the chemical constitution of different tissues in regard to the factors concerned in growth processes demonstrates clearly not only that malignant tumors are richer in this respect than the corresponding normal structures and innocent neoplasms of the same parts, but also that the physiologically maligant chorionic villi show even higher values than pathologically cancerous tissues. The chorionic epithelium is supermalignant. In the search for a substance that will arrest or have a specific lethal action on cells that possess the chemical constitution associated with malignancy, only lead has been found. This metal is specifically active in regard to the chorionic epithelium, to the cells of cancerous growth, to normal embryonic growth, and to mature cells rich in phosphatids.

Value of Mercurochrome-220 Soluble.—The conclusions reached by Todd as the result of his experimental and clinical observations are as follows: Mercurochrome is a powerful antiseptic of low toxicity, rapid and deep penetrability, and causes little irritation. It does not precipitate albumins. If protected from light, it is stable for long periods in physiologic sodium chlorid solution. Its antiseptic properties are augmented by acidity; they are diminished by increased density of solvent and are likely to be less apparent in heavy infections. Various strains of an organism show differences in susceptibility. At acidities near to normality its antiseptic properties are relatively feeble and it is unlikely to be of value in general infections.

2: 1047-1102 (Nov. 21) 1925

Nature of Man's Structural Imperfections. A. Keith.—p. 1047.
*Prophylaxis of Common Cold and Febrile Catarrhs. A. I. Simey.—p. 1051.
*Sensibility of Heart. Human Experiment. G. Waugh.—p. 1054.
*Influence of Glycerin Emulsion of Testes and Suprarenals on Tuberculous and Senile Patients. V. Korenchevsky.—p. 1056.
*Myomectomy as Treatment of Election for Uterine Fibroids. V. Bonney.—p. 1060.
*Margosa Oil in Treatment of Cancer. K. K. Chatterji.—p. 1063.
*Sudden Disappearance of Extreme Edema in Chronic Nephritis. A. J. S. Pinchin.—p. 1065.
Fat Necrosis of Breast. C. Rowntree.—p. 1065.
*Case of Recurrent Hair-Ball of Stomach. R. Harris.—p. 1066.

Prophylaxis of Common Cold.—Simey discusses this problem from the standpoint of the medical officer of a boy's school. His prophylactic measures consist of keeping the boys out of infection's way by avoiding overcrowding, and raising their immunity by prophylactic vaccination with stock vaccines.

Sensibility of Heart.—In the case cited by Waugh, an exploratory pericardiotomy was carried out with a purely regional and local analgesia, in the hope of discovering a lesion that could be benefited by surgical treatment. The lesion found was a fibroplastic pericarditis binding tightly the whole of the heart muscle to the parietal pericardium, with small lacunar spaces containing serous fluid intervening at intervals. The length of time taken to free the whole of the heart from its attachment to the pericardium was ten or twelve minutes, and the whole operation occupied about thirty-five minutes. At no stage of the operation did any stimulus that was applied produce any sensation that the patient was able to record in consciousness, and throughout most of the proceedings he chatted with the nurse; nor was this the sequence of amnesia, as he can relate fully at the present day all the ordinary details of the operation that he observed five years ago.

Organotherapy in Tuberculosis and Senility.—Observations made by Korenchevsky on seventy tuberculous patients and fourteen senile persons indicate practically *no efficiency in* the method of oral administration of preparations of testes and suprarenals.

Myomectomy for Uterine Fibroids.—As the outcome of his experience with myomectomy in 220 cases, Bonney urges a more extensive adoption of the operation so as to include in its scope many of the cases showing fibroids commonly dealt with by hysterectomy in order to conserve the uterus. Conservation of the uterus should be the ideal to be aimed at by the surgeon whenever the organ, apart from the tumors, is reasonably healthy. The largest number of fibroids that Bonney has enucleated at a single operation was eighty. A number of patients have subsequently conceived. In regard to the preservation of pregnancy complicated by fibroids which have to be removed, Bonney says that it is usually possible to achieve this when the tumor is solitary or, when multiple, not present in large numbers. Seven tumors are the most he has been able to enucleate without disturbing a coexistent pregnancy.

Margosa Oil in Cancer.—Chatterji relates his experience in the treatment of fungating ulcers with salts of margosa oil, which is obtained from the seeds of the nim or margosa tree and has in its composition saturated and unsaturated fatty acids. The unsaturated fatty acids appear to consist of oleic acid and an acid belonging to the linolic acid series, which is said to be the characteristic fatty acid of margosa oil. This acid has been called margosic acid, and it is not known to have been obtained from any other oil.

Nephritic Edema Disappears After Attack of Erysipelas.—Pinchin relates the case of a workman, aged 24, who had suffered more than fifteen years from chronic nephritis, which was a sequel of an attack of diphtheria. The edema of the legs, ascites and hydrothorax was extreme. Medicinal *treatment, tapping and even decapsulation of both kidneys* gave no relief. Finally, an erysipelatous condition of the legs and body developed, and within eight days all signs of fluid disappeared, and the patient apparently was well. There was no trace of edema; the urine still contained a heavy trace of albumin, but no casts.

Recurrent Hair Ball of Stomach.—Harris' patient has had five large hair balls removed from her stomach in the course of fourteen years. Apart from her hair-eating habits this woman was quite normal mentally, being well educated and a very fair musician. She seems to have suffered no permanent ill effects from her repeated operations, since her abdominal wall is firm, and, when her stomach is not full of hair, her digestion is unimpaired.

2: 1103-1152 (Nov. 28) 1925

*Muscular Dystrophies: Sympathetic System and Endocrine Glands. E. Bramwell.—p. 1103.
*Specific Treatment of Pneumonia. J. S. Dick.—p. 1110.
*Lipiodol in Diagnosis of Pregnancy. C. Heuser.—p. 1111.
*Polycythemia Rubra Relieved by Roentgen-Ray Treatment; Case. S. W. Patterson.—p. 1112.
*Acute Glomerulitis; Two Cases. S. C. Dyke.—p. 1114.
Undulant Fever Contracted in England, Case. C. R. Box and J. Bamforth.—p. 1115.
Large Mesenteric Cyst in Infant: Removal, Recovery. J. Morley and C. M. Manch.—p. 1116.

Muscular Dystrophies.—Bramwell believes that the generally accepted view according to which the muscular dystrophies are regarded as myopathies or primary diseases of muscle is a negative conception. He finds much evidence which would appear to suggest that the skeletal muscles in man have a dual innervation—a somatic supply concerned with movement and a sympathetic supply concerned with fixation. The suggestion is advanced that the muscular dystrophies may, perhaps, be determined by disease of the sympathetic supply to the skeletal muscles. The histologic appearances encountered in the muscular dystrophies are more easily accounted for by postulating a common cause than on the assumption that the process is a primary one affecting either the interstitial tissue or the muscle. An analogy is drawn with the tabetic arthropathies in which both hypertrophic and atrophic changes are seen. Symptoms are observed in the muscular dystrophies which cannot be explained by a primary disease confined to the muscles. This would suggest that the atrophic paralysis of the muscles is merely the most prominent manifestation of a more widespread process. It is suggested that the gradual loss of power and wasting may be determined either as a direct consequence of interference with the sympathetic innervation or as a consequence of secondary involvement of the somatic nerve fibrils by the changes in the muscles and interstitial tissue which result from disease of the sympathetic nerve supply. The suggestion is advanced that cases showing muscular dystrophy in which great improvement or recovery has *occurred may perhaps be explained by a difference in the* of the pathologic process. While the familial cases may be due to an abiotrophy of the sympathetic neurons, these isolated cases may conceivably have been determined by a toxic neuritis which has selected the sympathetic fibers and produced an atrophic paralysis of similar distribution. Pseudohypertrophy, when it occurs, is an individual rather than a familial characteristic. It is suggested that it may possibly be a superadded phenomenon dependent on a relative pituitary insufficiency. Facts are submitted which appear to indicate a relationship between disorders of the pituitary gland and the muscular dystrophies. It may be that disturbances of the pineal and other glands also occur. The probability would appear to be that the two conditions are due to a common cause rather than that the muscular dystrophy is secondary to the endocrine disturbance.

Vaccine Therapy in Pneumonia.—Dick has been using pneumococcal vaccine regularly for fifteen years as opportunity offered, and, though he has had cases in which this treatment seemed to have no effect, he feels strongly that every incipient case of pneumonia or doubtful "influenza" should be treated with pneumococcal vaccine without delay.

Diagnosis of Pregnancy.—When a woman after conception, and after one or more missed periods, wants to know whether she is pregnant, and the clinical examination is indecisive, Heuser says that lipiodol must be injected into the uterus. A roentgenogram should then be taken. If the injection has been successful, the roentgenogram will show, if the fetus is more or less developed, that the uterine cavity is not well filled, the lipiodol penetrating only around the fetus because the cavity is occupied. When the fetus is larger, the liquid penetrates very little, indicating pregnancy. If the period is missed once or twice and the patient thinks herself pregnant, the injection of the lipiodol into the uterine cavity may show in triangular shape and at the same time one or both tubes may fill up with the liquid. In such a case the roentgenogram shows that the uterine cavity is unoccupied and there is no pregnancy. The injection of lipiodol into the uterus does not provoke abortion if definite rules are observed.

Roentgenotherapy in Polycythemia Rubra.—A case of essential polycythemia rubra was treated successfully by Patterson by exposing the long bones to roentgen rays with the object of arresting overproduction of blood. It is suggested that the method may also be useful in treating certain cases of high blood pressure.

Acute Glomerulitis.—Two cases of pure acute glomerulitis with fatal issue are described by Dyke. Both cases were characterized by almost complete suppression of urine and complete absence of edema. Evidence is adduced pointing to the infective nature of this type of case, though in neither of the two instances could the causative organism be identified.

Medical Journal of Australia, Sydney

2: 521-544 (Oct. 21) 1925

Extracts of Endocrine Glands: Their Clinical Application. R. L. Davies.—p. 521.
Endocrine and Mental Disorders. G. P. U. Prior.—p. 524.

Practitioner, London

115: 301-368 (Nov.) 1925

Treatment of Malaria in Britain. R. Ross.—p. 301.
Initial Treatment of Fractured Limb. M. Sinclair.—p. 312.
Treatment of Fractures of Limbs. F. D. Saner.—p. 321.
Loose Bodies in Joints. L. Rogers.—p. 332.
Operation for Full-Time Extra-Uterine Pregnancy. D. W. Roy.—p. 339.
Use of Color in Treatment of Disease. J. D. Hessey.—p. 342.
Value of Medical and Veterinary Collaboration. F. Hobday.—p. 346.

Quarterly Journal of Experimental Physiology, London

15: 201-450 (Oct. 30) 1925

*Effect on Stomach of Stimulation of Peripheral End of Vagus Nerve. E. D. M'Crea, B. A. M'Swiney and J. S. B. Stopford.—p. 201.
Sedimentation and Rouleaux Formation. I. E. Ponder.—p. 235.
*Appearances of Mammalian Erythrocytes Under Dark Ground Illumination. W. G. Millar.—p. 253.
Technical Points Important for Study of Metabolism of Rabbits. V. Korenchevsky.—p. 259.
Comparative Physiology of Contractile Tissues. I. Action of Electrolytes on Invertebrate Muscle. L. T. Hogben.—p. 263.

Pancreas of Teleostean Fishes and Source of Insulin. S. Vincent, E. C. Dodds and F. Dickens.—p. 313.
*Effects of Fatigue and Temperature on Suprarenals of Rat. S. Vincent.—p. 319.
*Active Principles of Posterior Lobe of Pituitary. W. Schlapp.—p. 327.
Latent Period of Skeletal Muscle. J. F. Fulton.—p. 349.
Experiments on Contraction of White Connective Tissue Fibers. C. J. Tidmarsh and J. Tait.—p. 367.
Tactile Sensory Reflex. F. Allen and M. Weinberg.—p. 377.
Gustatory Sensory Reflex. F. Allen and M. Weinberg.—p. 385.
Structure and Function of Spleen. J. Tait and M. F. Cashin.—p. 421.
Examination of Sensitivity to Different Regions of Spectrum of Individuals with Hypochromatic Vision. H. B. Bradbrooke and H. E. Roaf.—p. 447.

Effect on Stomach of Stimulation of Peripheral End of Vagus.—M'Crea, M'Swiney and Stopford find that the primary effect on the stomach of stimulation of the peripheral cut end of either vagus is dependent on the existing condition of the peripheral mechanism ("tonus"), and may be inhibitor or augmentor. The inhibitor or augmentor effect may involve both "tonus" and movement. The final effect of stimulation is to bring about the augmentation of existing movement or to initiate movement. "Tonus" and contraction may vary inversely or directly.

Erythrocyte Structure.—No signs of internal structure could be seen by Millar in the human erythrocyte, even under the best conditions of dark ground illumination, an objective of numerical aperture 1-32 being used.

Effect of Exercise on Suprarenals.—Vincent's experiments show that the effect of exercise on the chromaphil reaction is not direct but secondary to the lowering of the animal's temperature.

Active Principles of Posterior Lobe of Pituitary.—Schlapp's experiments provide no positive evidence that the pressor and melanophore responses of the pituitary body are due to distinct substances.

Sei-i-Kwai Medical Journal, Tokyo

44: 1-28 (Oct.) 1925

Treatment of Bromidrosis Axillaris with Mercury Oxid. T. Shimozuma.—p. 1.
Studies on Fatigue and Efficiency. S. Uramoto and K. Utiyama.—p. 25.
Specific Dynamic Action of Protein. I. Influence of Amino-Acids on Metabolism of Fat and Carbohydrate in Animal Body. H. Nagaoka.—p. 26.
Morphologic Changes of Testes Due to Bacterial Infections. R. Hagihara.—p. 27.

Archives Internat. de Méd. Expérimentale, Liége

1: 483-733, 1925

*Spleen Treatment of Tuberculosis. Bayle.—p. 483.
Growth of Embryonal Tissues Outside the Organism. Mendeléeff.—p. 503.
*Indirect Means to Promote Allergy. B. Dujardin and N. Decamps.—p. 539.
*Platelet Extract and the Blood Pressure. J. Roskam.—p. 577.
Experimental Study of the Cardiovascular and Diuretic Action of Calcium Salts. L. Brull.—p. 613.
*Functions of the Gallbladder. L. Delrez and H. Cornet.—p. 649.
Brain Lesions in Amyotrophic Lateral Sclerosis. Van Bogaert.—p. 677.

Spleen Organotherapy in Tuberculosis.—This is Bayle's tenth publication on what he calls the "remarkable way in which subcutaneous injections of spleen extract check the development of tuberculosis." He has been experimenting with it since 1903, and he here describes research on twelve guinea-pigs, confirming the tendency to arrest and healing of experimental tuberculosis under the influence of the spleen treatment. He uses two parts of a glycerol extract of pigs' spleens to three parts of physiologic solution.

Indirect Means to Induce Immunity.—Dujardin and Decamps present evidence to show that injection of any antigen induces or intensifies the production not only of its own specific antibodies, but also, at the same time, of all the antibodies, of any kind previously present. If the specific antibodies are not very potent, their action may be effectually supplemented by the intensified antibodies of other kinds. The success depends of course on the individual capacity of the organism for reaction. This indirect method for influencing antibody production is not utilized to the full at present. They urge its application in the form of parenteral protein therapy as an adjuvant to the ordinary treatment. They relate that this alone gave surprisingly favorable results in some cases of syphilis refractory to the classic treatment. They give the details of a number of cases of syphilis in which, under a series of injections of milk, the blood and spinal fluid reactions became negative. By exalting the collateral sensitizations we may succeed in exalting the special sensitization which otherwise we are not able to influence. They suggest tabes and the preparesis stage as a particularly promising field for this treatment seeking to modify the soil.

Action of Blood Platelet Extract on the Blood Pressure.—Roskam's findings suggest that the aqueous extract of rabbit platelets has a dual vasomotor action, dilating the capillaries while constricting the arteries and probably the veins. Injected intravenously, it notably reduced the blood pressure in rabbits and dogs. Human and dog platelets had little if any action in this line.

Functions of the Gallbladder.—Delrez and Cornet report that the walls of the gallbladder yield cholesterol to the bile.

Bulletin de l'Académie de Médecine, Paris

94: 1035-1074 (Nov. 24) 1925

*Endometrioma and Uterine Dysembryoplasia. M. Letulle et al.—p. 1038.
The Wine Legend and the Abuse of Wine. J. Lépine.—p. 1056.
Radioactive Mineral Waters of Bagnères de Luchon. Lepape.—p. 1061.
*Epinephrine in Otolaryngology. G. Laurens.—p. 1069.

Endometrioma and Dysembryoplasia of the Uterus.—Letulle, Tuffier and Lambert report, among others, a case of interstitial endometrioma of the uterus, also an aberrant endometrioma, beneath a laparotomy scar, and another in the groin. The age of the women ranged between 35 and 52. In accord with Cullen, the authors believe that the interstitial endometrioma represents a hyperplastic malformation involving only a certain portion of the uterine mucosa. The old term for it, adenomyoma, is incorrect. The aberrant or extra-uterine endometrioma behaves like a supernumerary uterus. All these malformations are apparently due to some disturbance in the fusion of the Müllerian ducts at the third month of embryonal life.

Epinephrine in Otorhinolaryngologic Surgery.—Laurens asserts that the by-effects of epinephrine, in surgery, may be avoided if the drug is applied locally. No complications will occur even with 5 or 10 cc. of a 0.1 per cent solution of epinephrine used in this way, he says, in the ear, nose and throat. In subcutaneous injections, the amount of 25 drops of this epinephrine solution, in 100 cc. of the anesthetic solution, should not be surpassed. He advises local application of epinephrine a few minutes before a submucous injection in the nose.

Comptes Rendus de la Société de Biologie, Paris

93: 1137-1196 (Nov. 13) 1925. Partial Index

*Urethritis from Pasteurella. J. P. Papadopoulo.—p. 1139.
Transmission of Herpetic Encephalitis to Rabbits. P. Remlinger and J. Bailly.—p. 1142.
*Antibodies and Antigen in Pleural Effusion. M. Salomon and J. Valtis.—p. 1145.
Have Radium Emanations an Affinity for Cancer Tissue? Kotzareff.—p. 1148.
*Benzoin Test with Brain Tumors. G. Guillain et al.—p. 1151.
*Action of Agaric Acid on Autonomic Nervous System. Bergström.—p. 1155.
*Idem of Coumarin. E. Bergstrom.—p. 1159.
*Idem of Eserine. K. Granberg.—p. 1167.
*Idem of Jalapin and Cambogia. N. Hollander.—p. 1171.
*Idem of Colocynth. N. Hollander.—p. 1175.
*Idem of Colchicine. T. Jacobson.—p. 1178.
*Idem of Peptone and Glycocoll. F. Nord.—p. 1185.
*Idem of Nicotine. H. Rydin.—p. 1189.
*Action of Nicotine on Epinephrine and Acetylcholine. H. Rydin.—p. 1193.

Urethritis of Pasteurella Origin.—Papadopoulo observed in Egypt six cases of urethritis caused by pasteurella. Infection by this bacterium, he says, has not been cited to date among the nongonorrheal affections of the urethra. He emphasizes that the pasteurella may easily be mistaken for the gonococcus.

Tuberculous Antibodies and Antigen in Blood and Pleural Effusion.—Salomon and Valtis' examination was made on nineteen patients. The fixation reaction was positive in the blood serum and the pleural effusion of thirteen of fourteen patients with pulmonary tuberculosis, treated by artificial pneumothorax. In all these cases, except two, the proportion of antibodies was the same in the serum and the effusion. The antigen property of both fluids was also tested. While the exudate with pneumothorax contained sometimes large amounts of antigen, the exudate in simple tuberculous pleuritis did not appear to possess any antigen property.

Benzoin Test with Cerebral Tumor.—Guillain, Laroche and Lechelle applied the colloidal benzoin test forty-nine times to the cerebrospinal fluid from twenty-eight patients with a tumor of the brain. The response was negative in five subjects. In seventeen the reaction showed negative in the first five test tubes (syphilis zone); positive in the sixth to tenth tubes, sometimes to the fourteenth tube (meningitis zone). In six instances the test was positive in the first five tubes, also in the last, but negative in the tubes between. The absence of precipitation in several tubes, between the two specific zones of precipitation, may be valuable in differentiation of a brain tumor from syphilis.

Research of Swedish Scientists on Action of Certain Drugs.—The experiments were conducted on rabbits and frogs. Bergström found that agaric acid stimulated the sympathetic and parasympathetic motor nerves in the uterus, intestine and heart. It enhanced also the action of epinephrine and alkaloids on the parasympathetic. The effect of very large doses of agaric acid was the opposite. Coumarin appeared to inhibit the excitability of the sympathetic and parasympathetic nerves, while reducing the contractility of the smooth muscles. Granberg found that eserine paralyzed the sympathetic motor nerves. Hollander reports that jalapin exerted a toxic action on the parasympathetic; and colocynth, although a cathartic, in large doses paralyzed the parasympathetic nerves of the intestine. Jacobson found that colchicine paralyzed the parasympathetic terminal nerves, but did not affect the sympathetic motor nerves of the heart. Nord states that large doses of peptone, introduced subcutaneously, prolonged the increase of glycemia from epinephrine. Peptone as well as glycocoll seemed to arrest the hypoglycemia-inducing action of insulin. Rydin asserts that in his research nicotine paralyzed the terminal sympathetic motor innervation and even the inhibiting parasympathetic; thus checking the motor action of epinephrine and of acetylcholine.

Nourrisson, Paris

13: *349-412* (Nov.) 1925

French Institution for Convalescent and Undernourished Infants. P. Lereboullet.—p. *349.*
*Tetany of Young Children. E. Lesné and R. Turpin.—p. 356.
Jaundice of the New-Born. H. Slobosiano and P. Herscovici.—p. 373.

Clinical Character and Treatment of Tetany in Young Children.—Among Lesné and Turpin's fifty cases, a latent, or spasmophilic, condition of tetany was noted in thirty-three, and a manifest form in seventeen. The age of the children ranged from 13 months to 4 years. The affection appeared more frequently during the winter, evidently in connection with light deficiency. Signs of rickets were manifest in twenty-two of the thirty-three cases of latent tetany. The level of the ionized calcium in the blood serum was below normal in all cases. Chronaxia was increased during the spasms. Lesné and Turpin consider calcium chloride and the ultraviolet rays as the most effectual treatment of tetany. The calcium chloride should be given in daily doses of from 4 to 5 Gm. to infants. Daily exposures to the rays, or three times a week, are gradually increased from two to fifteen minutes. Series of fifteen irradiations may be repeated at ten days' intervals. A complete recovery was obtained in eleven patients out of twenty-three with latent tetany after one or two series. The treatment appeared less beneficial in latent or manifest tetany associated with rickets; even three series failed to display any influence.

Revue Franç. de Gynécologie et d'Obstét., Paris

20: 577-608 (Oct. 25) 1925

*Interagglutination of Maternal and Fetal Blood in Relation to Eclampsia. V. Cathala and H. Le Rasle.—p. 577.

Is Interagglutination of Maternal and Fetal Blood a Factor in Pregnancy Toxemias?—Cathala and LeRasle found in ninety-two cases of normal pregnancy that the blood of the mother and of the new-born infant were of different groups in twenty-five; thus there was blood incompatibility in 14 per cent. Of the twenty-nine cases with pregnancy complications, the blood groups were different in the mother and fetus in only 20 per cent. Blood incompatibility was manifest in three of twenty-one pregnant women with albuminuria; in one of four with eclampsia and in one of three with utero-placental hemorrhage. Evidently incompatibility of the maternal and fetal blood is not responsible for eclampsia or other complications in pregnancy as, in the majority of the toxemias of pregnancy investigated, there was no iso-agglutination.

20: 609-648 (Nov. 10) 1925

*Pregnancy and Postoperative Adhesions. J. Moglia.—p. 609.

Importance of Adhesions in Pregnancy.—Moglia reports six cases in which adhesions consecutive to appendectomy had provoked premature labor. He reiterates that adhesions from a pathologic process or an operation may impede the development of a pregnant uterus, and entail abortion, premature labor or shoulder presentation. The adhesions may cause severe pain during pregnancy, requiring sometimes surgical intervention. Careful restoration of the peritoneal cavity to its previous condition, at every laparotomy, may be a prophylactic measure against these complications of pregnancy.

Policlinico, Rome

32: 473-536 (Oct. 15) 1925. Surgical Section

Origin of Cooper's Fascia in Scrotal Region. P. Barco.—p. 473.
Fracture of Lower End of the Humerus. G. Cairo.—p. *479.*
Hydatid Cyst in Lumbar Region. A. Campatelli.—p. 493.
Blood Cysts in the Neck. V. Jura.—p. 501.
*Elephantiasis of the Legs. M. Melletti.—p. 520.

Operative Treatment of Varicose Elephantiasis of the Legs.—Melletti's illustrations show the almost perfect result of a Kondoleon operation done four years ago on a women, aged 48, whose work requires almost continuous standing. He kept her in bed for nearly three months, with massage, before the operation, to get the skin and leg ulcers into better condition. He prefers Kondoleon's technic as no foreign body is left in the tissues, and as Arnold's explanation of its mechanism seems so plausible.

Riforma Medica, Naples

41: 1085-1108 (Nov. 16) 1925

Case of Mega-Esophagus. V. Scimone.—p. 1085.
Ileocolostomy. O. Cantelmo.—p. 1088.
The Aeroplane in Transporting the Sick and Wounded. Baduel.—p. 1103.
*Tuberculous Peritonitis. T. Silvestri.—p. 1105.

Tuberculous Peritonitis.—Silvestri reiterates the advantages of insufflation of air in tuberculosis of all serous cavities. He has been applying this method in his practice since 1906.

Tumori, Rome

11: 385-511, 1925

Kidney Tumor of Partial Hypernephroma Type. D'Alessandro.—p. 385.
Histogenesis of Spleen Neoplasms. G. Lino.—p. 407.
Serologic Findings at Different Ages. G. Pacetto.—p. 421.
*Importance of Certain Organs in Oncology. G. Pacetto.—p. *463.*

Importance of Certain Organs in Oncology.—Pacetto remarks that, of all the organs, the blood and lymph producing apparatus seem to exert the greatest inhibiting influence on tumor production. The measures which check the growth of tumors (roentgen rays, autolysates, etc.) act predominantly by stimulating the action of the inhibiting organs. The tumor cell-destroying property seems to be strongest at birth and decreases with age. It is the loss of this property, and not the acquirement of any tumor-promoting property, which explains the incidence of tumors with advancing years. In one newly born infant, the extract of the thymus displayed a lytic action of 70 per cent on tumor cells and of 15 per cent on normal cells. In some other children, these figures were 80 and 10 with the spleen; 75 and 5 with the thymus; 50 and 0 with the skin. The findings with mixtures of young and old serums are tabulated.

Archivos Españoles de Pediatría, Madrid

9: 577-640 (Oct.) 1925

The Training of Abnormal Children. C. Juarros.—p. 577.
*Cholesterol in Cerebrospinal Fluid. García del Diestro.—p. *601.*

Cholesterol in the Cerebrospinal Fluid of Children with Recurring Acidosis.—García del Diestro relates that in two cases of attacks of acetonemia, with symptoms of encephalitis, there was no odor of acetone on the breath, but numerous cholesterol crystals were found in the cerebrospinal fluid. This acetonemic acidosis encephalitis differed from the epidemic form in the lack of the ocular symptoms, the intensity and persistence of the vomiting, and the absence of the tendency to somnolency and headache. Another important differential symptom is the elimination of acetone bodies. He suggests that in this recurring hemacidosis, the hypercholesteremia represents a defensive reaction against the acetonemic intoxication.

Archivos Latino-Amer. de Pediatría, Buenos Aires

19: 973-1044 (Aug.) 1925

*Oneiric Delirium. J. M. Obarrio.—p. 973. Begun, p. 906.
*Suppuration in Urinary Tract in Infants. E. Martinez Zuviria.—p. 989.
Clutton's Hydrarthrosis. S. Satanowsky.—p. 1002.
*Case of Thrombophlebitis of Lateral Sinus. M. Rodella.—p. 1008.
General Paresis in Boy Aged 15. A. Sicco and N. Leone Bloise.—p. 1011.
*Chronic Polyarticular Rheumatism in Child. E. Portu Pereyra.—p. 1021.
*Epistaxis from Sodium Salicylate. M. Rodella.—p. 1026.

Nocturnal Nervous Disturbances and Oneiric Delirium in Children.—A similar article by Obarrio was summarized in these columns, Dec. 26, 1925, page 2058.

Suppuration in Urinary Apparatus in Infants.—Martinez Zuviria reiterates that the practitioner must beware of assuming intestinal infection as a matter of course when an infant presents fever. Search for blood, albumin, colon bacilli or pus in the urine may reveal suppuration in the urinary passages. Treatment is practically the same whether it is in the bladder or the kidney; the main thing is to think of its possibility, especially when it is secondary to an infectious disease. He describes a number of cases, saying that the portal of entry was not discovered in any instance.

Thrombophlebitis of the Lateral Sinus.—The girl, aged 13, with chronic otitis, died suddenly after a day or two of a slight meningeal reaction, explained by thrombophlebitis of the lateral sinus.

Chronic Rheumatism in Child.—The symmetrical chronic deforming polyarticular rheumatism developed at first in the boy, aged 8, as an acute febrile and very painful articular rheumatism. This acute phase subsided after a two months' course, without apparent injury of the heart. There is nothing to indicate syphilis in the family.

Epistaxis from Sodium Salicylate.—Rodella reports a series of five children who presented profuse and repeated epistaxis after vigorous treatment with sodium salicylate for acute articular rheumatism; all but one of the cases were in the same month.

Brazil-Medico, Rio de Janeiro

2: 143-160 (Sept. 12) 1925

*Injection Treatment of Hemorrhoids. L. Sodré.—p. 143.
*Unusual Complications of Influenza. A. Marques.—p. 151.
*Symmetrical Keratitis in Infants. E. Campos.—p. 153.

Injection Treatment of Hemorrhoids.—Sodré mentions three reasons why local injections, to obliterate the vessel, should be applied only to external hemorrhoids. From six to twelve injections are usually required, and there should be no pain from them. Of the 547 injections he has made for this purpose, there was an inflammatory reaction, with pains, only in six. He follows the Bensaude technic (quinin and urea) and found only four of the 223 patients in whom this treatment was contraindicated. He urges educating the public to the advantages of correcting the condition early.

Unusual Complications of Influenza.—Marques lists intense pains in joints, asthma, pyelitis or anuria observed in several cases as a complication of influenza. In one young woman the influenza began with asthma and terminated with pyelitis. The anuria in one case, with retention of chlorids, proved fatal.

Keratitis from Dehydration.—Campos emphasizes the necessity for watching over the eyes in gastro-intestinal disease or coma, especially in infants. If the lids do not close tight, or if there is dehydration, the cornea gets too dry, and there is liable to be suppuration. The lesion is usually bilateral, symmetrical, and torpid, and it subsides under local treatment as the general health improves. This form of keratitis would never develop if care were taken to close the eyelids with a strip of adhesive during prolonged coma, etc.

Revista de la Soc. Arg. de Nipiología, Buenos Aires

1: 93-140 (Sept. 24) 1925

Proposed Ordinance on Milk. M. Etchegaray and E. Foster.—p. 93.
*Congenital Diaphragmatic Hernia. U. Fernández.—p. 102.
Birth Injuries of the Shoulder. J. M. Jorge.—p. 123.
Consanguinity. J. Busco.—p. 131.
Acquired Alcoholism in Infants. A. Segers.—p. 137.

Diaphragmatic Hernia in the New-Born.—Ubaldo Fernández reports the case of an infant that became cyanotic as it took the breast, and the thorax bulged while the abdomen was sunken, the apex beat displaced, and there was no gastric fremitus. His roentgenograms revealed left diaphragmatic hernia. As the Wassermann test was weakly positive, treatment for syphilis was begun, with excellent results; the symptoms were much less pronounced now at the age of 3 months. He gives the roentgenograms of a second case; this infant lived only thirty minutes.

Semana Médica, Buenos Aires

2: *945-1012 (Oct. 15) 1925*

*Epidemic Encephalitis in Children. M. Acuña.—p. 945.
*Endemic Chronic Arsenicism. J. J. Bosco.—p. 951.
*Paroxysmal Cyanosis. R. Cibils Aguirre.—p. 957.
Use of Oxytocics by Midwives. J. A. Gabastou.—p. 965.
*False Hirschsprung's Disease. J. J. Viton and J. A. Cruciani.—p. 969.
Hernia of Vitreous Body. J. Lijó Pavia.—p. 972.
The Primary Focus in Child Lung. C. Carreño.—p. 974.
Infected Gastric and Duodenal Ulcer. R. Solé.—p. 979.
Vaccine for Pneumococcus Infections. Torviso and Cramer.—p. 983.
Technic for Ligation of Tibial Artery. J. A. Caeiro.—p. 986.
Rupture of Ovarian Cyst at End of Pregnancy. Pérez and Guiroy.—p. 989.

Epidemic Encephalitis in Children.—Acuña comments on the rarity of this disease in young children, and describes two cases in girls aged 8 and 14, with apparently complete recovery after a course of three months and of forty days. The clinical picture was very grave in the younger child; from the first, muscular incoordination was extreme, with inability to stand, and absence of knee-jerk. In both, the high glucose content of the spinal fluid confirmed the diagnosis. Epidemic encephalitis in quite young children is probably mistaken for other disease—he knows of only five established cases on record, although he has encountered several suggestive cases himself.

Endemic Chronic Arsenic Poisoning.—Bosco illustrates some extreme cases of keratoderma from arsenic in the water. He urges the necessity for suspecting endemic arsenicism with symmetrical lesions of the kind; the diagnosis is established beyond question when there is pigmentation besides. The melanoderma persists even after the keratoderma has retrogressed. Córdoba province has several endemic foci, but Bell-Ville, the principal one, has now secured a safe water supply.

Paroxysmal Cyanosis.—The infant in Cibils Aguirre's case had a good color except during the attacks of Variot's paroxysmal cyanosis. The teleroentgenograms are compared with the normal standards, showing global enlargement of the heart and special dilatation of the right ventricle. This sustains the assumption of an abnormal narrow infundibulum, acting under special strain like a sphincter, checking and backing up the blood.

False Hirschsprung's Disease.—The positive response to the tuberculin skin test called for tuberculin treatment in the case of what seemed to be Hirschsprung's disease in a boy aged 5. To Viton and Cruciani's surprise, the tuberculin treatment cured the megacolon, the impediment to the passage of feces disappearing and the intestines returning to approximately normal size. Diarrhea during the first year of life may have been the first manifestation of the undoubtedly tuberculous process. The obstruction was at the right angle of the colon. The tuberculin was given by Viton's method of extremely minute doses.

Archiv für klinische Chirurgie, Berlin

137: 199-462 (Nov. 25) 1925

Hemorrhage in Disease of the Bile Passages. K. Büdinger.—p. 199.
*Operations on the Sympathetic Nerve. E. Liek.—p. 220.
Intestinal Occlusion. J. Perlmann.—p. 245.
Gunshot Wounds of Peripheral Nerves. S. A. Jacobson.—p. 265.
*Artificial Sphincter in Treatment of Hernia, etc. H. Hans.—p. 277.
*Nerves of Arteries. L. Hirsch.—p. 281.
Periosteum and Pseudarthroses. H. Jessen.—p. 289.
Amputation of the Lung. J. Feiermann.—p. 300.
Gallbladder Diverticulum and the Stomach. W. Sebening and W. Schöndube.—p. 308.
*The Bone After Nail Extension. W. Block.—p. 315.
Treatment of Infected Wounds. S. Nakamura.—p. 330.
Gas Metabolism After Surgery on the Thyroid. E. Gmelin and H. L. Kowitz.—p. 340.
Intussusception in Children. W. Birkenfeld.—p. 356.
Surgical Results in Exophthalmic Goiter. A. Ladwig.—p. 367.
*Fatal Hemorrhage After Extraction of Tooth. F. Kroh.—p. 389.
Fracture of Neck of Femur. L. Kreuz.—p. 401.
Orchidopexy in Cryptorchism. N. N. Ssokolow.—p. 438.
Deep Duodenal Ulcer. H. Lossen and E. Schneider.—p. 446.
Arthrotomy of the Knee. N. Grzywa.—p. 453.
Intramesenteric Fibromyoma. O. Wassertrüdinger.—p. 456.
Treatment of Genu Valgum. K. Reschke.—p. 459.

Operations on the Sympathetic Nerve.—Liek's iconoclastic paper explaining the results of surgery of the sympathetic as witchcraft (*Zauber*) will be discussed elsewhere.

Artificial Sphincter in Treatment of Hernia.—Hans covers the defect in the abdominal wall by forming two pedunculated bridges of fascia, crossing them in the center and suturing the margins together. The arch thus formed by fascia pulling in opposite directions contracts the edges of the gap, whenever it is subject to strain. He uses a similar principle in treatment of large diastasis of the rectus muscles, and in making an artificial anus.

Nerves of Arteries.—Dissection of the nerves of the arteries convinced Hirsch that the decortication of peripheral sympathectomy cannot interrupt any long paths. Yet it denervates not only the segment where it is made, but also partially the distal portions of the artery and its branches.

The Bone After Nail Extension.—Block found very little change in the bones after wire extension—with good technic, avoiding pressure and infection of skin and soft parts. Boring into the bone produces heat, which inhibits to a certain extent the formation of callus. The latter forms better when a saw or chisel is used.

Fatal Hemorrhage After Extraction of Tooth.—Kroh's patient bled to death within a few minutes after extraction of a loose tooth. His mother remembered afterward that he had been bleeding in the preceding days. The cause was a cavernous angioma of the mandible. Kroh emphasizes the necessity to proceed cautiously in extracting loose teeth with preceding hemorrhages. Roentgen-ray examination and an exploratory puncture of the swelling might have indicated that a major intervention would have to follow.

Deutsche medizinische Wochenschrift, Berlin

51: 1975-2016 (Nov. 27) 1925

Predisposition and Epidemics. B. Lange.—p. 1975.
*Gastric Secretion. W. Arnoldi and M. Schechter.—p. 1980.
Visceromotor Reflex from Pleural Adhesion. L. Hofbauer.—p. 1981.
*Simultaneous Injection of Tuberculin and Vaccine. Fernbach.—p. 1983.
Prognosis of "Tennis Elbow." K. Ochsenius.—p. 1988.
Irradiation and Endocrines in Cancers. M. Frankel.—p. 1989.
Reply. L. Halberstädter.—p. 1989.
*Fragility of Erythrocytes and Digestion. Acél and Gál.—p. 1990.
Rickets: Theory and Practice. P. György.—p. 1991.
*Light, and Cause of Rickets. R. Degkwitz.—p. 1993.
Endocrines and Rickets. H. Vollmer.—p. 1994.
*Kyphosis in Rickets. S. Engel.—p 1995.
Present Status of Rickets Question. H. Beumer.—p. 1997.
Milk in Infant Feeding. S. Engel.—p. 1998.
Venereal Diseases in Children. H. Davidsohn.—p. 2010. C'td.

Gastric Secretion.—Arnoldi and Schechter observed an increased acidity of the gastric secretion in subjects who had taken 20 Gm. of glucose in 150 cc. of water twelve or more hours before the test meal. Preparations of pancreas lowered the acidity.

Simultaneous Injection of Tuberculin and Vaccine.—Fernbach repeated Moro and Keller's experiments on tuberculin allergy induced by intracutaneous injections of a mixture of tuberculin with smallpox vaccine. He confirmed the cutaneous allergy, but he obtained the same results when using merely a concentrated glycerol bouillon for the inoculation or for the skin test. Tuberculin made no difference, and the skin reaction did not flare up after a subsequent intramuscular injection of tuberculin. He confirms, however, that the smallpox vaccine is necessary, even if it does not produce a pustule: A mixture of tuberculin with a streptococcus vaccine did not produce any allergy to the unknown constituent of the bouillon.

Fragility of Erythrocytes and Digestion.—Acél and Gál made parallel examinations of the carbon dioxid tension of the alveolar air and of the osmotic resistance of erythrocytes during digestion in patients whose gastric secretion had been examined the day before. The findings confirmed a practically complete correspondence between the conditions of secretion in the stomach and the carbon dioxid tension of the alveolar air (increase of the latter in normal subjects and in hyperacidity; decrease in anacidity). The osmotic resistance was perfectly parallel: higher in thirty-five minutes and normal seventy-five minutes or two hours after a test meal. This confirms Acél and Spitzer's hypothesis of a change of alkali reserve of the blood as the cause of the changes of fragility of the erythrocytes during digestion.

Light, and Cause of Rickets.—Degkwitz analyzed chemically the organs from apparently normal young dogs that had been kept in darkness. The bones contained less calcium, phosphorus and sodium, while the potassium was absolutely or relatively increased. There were also distinct anomalies in the fat, protein and carbohydrate content of the bones and other tissues.

Kyphosis in Rickets.—Engel deals with the paralytic kyphosis of children with rickets. He advises to place the child prone on the table, lying on its abdomen, and to tickle it on the sides. The child responds by extending its spine and holding its head high. When the seated child tries to grasp objects held high over its head, this also corrects the kyphosis during these motions.

Klinische Wochenschrift, Berlin

4: 2281-2328 (Nov. 26) 1925

Surgery of Heart and Vessels. F. Brüning.—p. 2281.
*Protein Activation of Insulin. F. Bertram.—p. 2285.
*The Brain in Spirochetoses. G. Steiner and H. Schauder.—p. 2288.
*Hereditary Tendency to Paralysis Agitans. H. Kückens.—p. 2289.
Action of Cathode Rays. A. Passow and W. E. Pauli.—p. 2292.
*Atoxyl-Resistant Lipase in Serum. H. Simon.—p. 2295.
*Epinephrin Reaction in Hypertension. S. Hetényi and S. Sümegi.—p. 2298.
*Modified Abderhalden Reaction. E. Herzfeld et al.—p. 2302.
*Action of Theophylline on Tadpoles. A. Fröhlich and E. Zak.—p. 2303.
*Theophylline and Tissues. A. Fröhlich and E. Zak.—p. 2305.
Pancreas Diseases in Infants. E. Burghard.—p. 2305.
Treatment of Collapse. J. Mantz.—p. 2306.
*Family Placement of Children in the Country. Vonessen.—p. 2309.
Perlingual Application of Insulin. J. Korbsch.—p. 2327.
Visualization of Arteries. J. von Csapody.—p. 2327.

Protein Activation of Insulin.—Bertram succeeded in enhancing the action of subcutaneous injections of insulin by mixing it with various proteins. The patient's own serum had the strongest influence; normal serum a weaker one; casein and a vegetable protein only about doubled the potency. The same substances inhibited the action of epinephrine in about the same ratio and sequence. The influence of the patient's own serum was so marked that he advises its use in every case of diabetic coma. He observed that intravenous injections act only according to the insulin content. Consequently, the intensified action of insulin is due to some process occurring in the subcutaneous tissue.

Pathology and Therapy of Spirochetoses.—Steiner and Schauder demonstrated the presence of recurrens spirochetes in the central nervous system of rats which had been injected months before. The animals were immune to reinfection.

Hereditary and Familial Tendency to Paralysis Agitans and Diabetes.—Kückens publishes a family tree showing paralysis agitans in five generations. Besides this, he observed diabetes *in the family. It was especially grave in two univitelline* twin boys, 15 years of age.

Atoxyl-Resistant Lipase in Serum in Pancreas Disease and in Pernicious Anemia.—Simon reports on further confirmations of the diagnostic value of the presence of an atoxyl-resistant lipase in the serum in disease of the pancreas. He found it also in six of fourteen pernicious anemia patients. The diastase content of the serum was also higher in some of them. The lipase contained in normal erythrocytes resists atoxyl and quinin, while the serum lipase is destroyed by these chemicals.

Epinephrine Reaction in Hypertension.—Hetényi and Sümegi were not able to find a pure vagotonic reaction of the blood pressure to epinephrine when using Csépai's intravenous method.

Modified Abderhalden Reaction.—Herzfeld, Kretschmer and Wittenberg conclude that the Lüttge and Mertz modification of the Abderhalden reaction has no diagnostic value in cancer or tuberculosis. Theoretically interesting results were obtained in endocrine disturbances. They used the commercial extracts recommended by the authors of the modification.

Action of Theophylline on Tadpoles.—Fröhlich and Zak found that theophylline in certain concentrations (1:100,000 or 1:200,000) enhanced the growth of tadpoles. A still higher dilution yielded the highest percentage of living frogs after metamorphosis.

Theophylline and the Tissues.—Fröhlich and Zak's experiments indicate that theophylline accelerates the resorption of low molecular compounds (sodium chloride, iodide and ferrocyanide). It seems to retard the absorption of trypan blue and indigocarmine from the subcutaneous tissue. If these substances are injected intraperitoneally, the conditions for resorption are so good that the mobilization of fluids—caused by the theophylline—enhances the resorption of all compounds.

Family Placement of Children in the Country.—Vonessen emphasizes that only a good selection of both the children and of the families which are to receive them avoids grave failures. The cooperation of a physician is essential.

Medizinische Klinik, Berlin

21: 1789-1828 (Nov. 27) 1925

Light and Bone Formation. W. Stepp.—p. 1789.
Tuberculosis of the Eye. Stock.—p. 1790.
Function Tests. E. Abderhalden.—p. 1792.
Female Constitutional Types. W. Hannes.—p. 1793.
*Treatment of Exudation and Infection. R. Latzel.—p. 1797.
*Traumatic Occlusion of Arteries. E. Melchior.—p. 1799.
Cancer of the Gallbladder. A. Luger.—p. 1801.
Biliary Passages and the Roentgen Rays. M. Cohn.—p. 1802.
Paralysis of the Inferior Laryngeal Nerve. W. Jülich.—p. 1805.
*Bock's Hormone Proof in Blood. G. R. Heyer.—p. 1806.
Reply. G. Peritz.—p. 1807.
*Inunction Treatment of Syphilis. B. Albrecht and E. Evers.—p. 1807.
Occupational Aggravation of Heart Lesions. Von Schnizer.—p. 1810.
Physical Therapy. G. Hauffe.—p. 1811.
Convalescents' Serum. B. de Rudder.—p. 1813.
Insulin Treatment. W. David. Supplement, pp. 107-126.

Treatment of Exudation and Infection.—Latzel had success in treatment of pulmonary edema in pneumonia with intravenous injection of 20 cc. of a 20-50 per cent glucose solution. He observed early recovery from pneumonia and typhoid when injecting a few cubic centimeters of milk and twelve hours later the sugar by the vein.

Traumatic Occlusion of Arteries.—Melchior points out that wounds of the extremities may cause obliteration of an artery. The subjective symptoms resemble intermittent claudication but they are limited to one side. The skin below usually feels cooler. These patients are frequently mistaken for "rheumatism-claiming malingerers," and the causal connection with the injury is denied.

Bock's Hormone Proof in Blood.—Heyer obtained at first good results with the polarimetric differentiation of hormones in the blood, as devised by Bock. Later on, after he made the determination exclusively without knowing the diagnosis, the failure was complete. He attributes the correct results to autosuggestion. Peritz admits this possibility, but prefers to wait for the decision of authorities on physics because of a few surprising correct results.

Inunction Treatment of Syphilis.—Albrecht and Evers found no therapeutic action from inunction with bismuth in syphilis of rabbits.

Wiener klinische Wochenschrift, Vienna

38: 1301-1324 (Dec. 3) 1925

*Sino-Auricular Conduction. C. J. Rothberger and D. Scherf.—p. 1301.
*Agranulocytosis. B. Pfab.—p. 1302.
Amputation of Leg in Gangrene. I. Eisenklam.—p. 1303.
*Regional Muscle Depression and the Stomach. T. Bársony.—p. 1306.
Liver Infarction After Rupture. W. Steiger.—p. 1308.
Amebiasis of Urinary Tract. M. Petzetakis.—p. 1310.
*Treatment of Asthma. L. Hofbauer.—p. 1311.
Therapeutic Tendencies in Surgery. W. Denk. Supplement, pp. 1-12.

Sino-Auricular Conduction. — Rothberger and Scherf's experiments showed the existence of two distinct paths of conduction between the sinus node and the auricle. Elimination of one of them caused changes of the auricular electrocardiogram. Ligation of both isolated the sinus.

Agranulocytosis.—Pfab reports a case of agranulocytic angina in a man 31 years of age. Besides the typical symptoms, thrombopenia and absence of megakaryocytes were observed. Blood transfusion had no effect on the rapid decrease of the white blood cells. The patient's erythrocytes belonged to group II.

Regional Muscle Depression and the Stomach.—Bársony attributes the motor insufficiency of the stomach (without stenosis) to a depression of the muscle tonus in the surroundings of an inflammatory focus (ulcer).

Treatment of Asthma.—Hofbauer recommends, among other measures, theobromine preparations.

Zeitschrift für klinische Medizin, Berlin

102: 129-342 (Nov. 16) 1925

Idiosyncrasy. H. Koenigsfeld.—p. 129.
*Gastric Tonus and Temperature. W. Weitz and W. Vollers.—p. 141.
*Mineral Metabolism. H. Bernhardt and C. R. H. Rabl.—p. 147.
Calcium Metabolism and White Phosphorus. H. Bernhardt.—p. 174.
*Scarlet Fever Nephritis. F. Koch.—p. 182.
Familial Metabolic Disturbance in Diabetes. H. Seckel.—p. 195.
*Insulin and Liver Disease. O. Klein.—p. 229.
*Insulin and Gas Metabolism in Exophthalmic Goiter. H. Meyer.—p. 250.
Therapeutic Malaria. W. Skalweit.—p. 258.
Ovary and Purpura. G. Nagy.—p. 284.
*Thrombosis of Coronary Arteries. D. Pletnew.—p. 295.
Tuberculosis as Cause of Dermatomyositis. W. Grunke.—p. 311.
Gas Metabolism in Skin Disease. E. Pulay.—p. 320.

Gastric Tonus and Temperature.—Weitz and Vollers found that the tonus of the stomach is increased by hot contents and decreased by cold ones. It is the opposite of the action of thermic stimuli on the skin.

Mineral Metabolism and White Phosphorus.—Bernhardt and Rabl added ammonium chloride to the diet of young rats. It caused grave disturbances of ossification in spite of a diet containing ample vitamins and salts. White phosphorus causes a sclerosis of the bones if the food contains enough phosphates and calcium. It also causes rickets if both calcium and phosphates are deficient. It prevents the formation of lime calculi in the tubules which otherwise occurs on diets containing much sodium phosphate.

Scarlet Fever Nephritis.—Koch found an increased blood pressure in the majority of convalescents from scarlet fever. It may disappear in a day or a few days, but it may lead to albuminuria and hematuria.

Insulin in Liver Disease.—Klein injected insulin in various diseases of the liver and confirms a favorable action on the subjective disturbances and on the jaundice. The injection produces here a water retention in the blood. The blood sugar, which is here usually low, sinks under insulin to a lower level than in other subjects. Administration of water and levulose accentuates this hypoglycemia further.

Insulin and Gas Metabolism in Exophthalmic Goiter.—Meyer observed a lowered oxygen consumption after injections of insulin in exophthalmic goiter patients.

Thrombosis of Coronary Arteries.—Pletnew diagnoses thrombosis of the coronary arteries in a status anginosus. A diastolic gallop rhythm may be observed. In thrombosis of the right coronary artery, the right heart dilates acutely, the liver swells and is painful, while there are no signs of pulmonary stasis in the beginning. Thrombosis of the left coronary artery leads to an acute dilatation of the heart toward the left side and downward, and there is acute pulmonary edema.

Zeitschrift für Krebsforschung, Berlin

22:455-554 (Nov. 20) 1925

Invisible Virus and Cancer. C. Lewin.—p. 455.
*Histophysiology of Cancer Cells. I. G. Roskin.—p. 472.
Treatment of Mouse Cancer. R. Roosen.—p. 490.
Local Cancer Statistics (Lower Rhine District). H. Müller.—p. 494.
Metabolism of Cancer Cell. A. Lasnitzki.—p. 531.
Glycolysis in Rat Tumors of Bacterial Origin. A. Lasnitzki.—p. 536.
*The Blood in Experimental Cancer. F. P. Tinozzi.—p. 540.
Spontaneous Rat Sarcoma. P. Cohrs.—p. 549.

Histophysiology of Cancer Cells.—Roskin's studies indicate that in the majority of the cells of mouse cancer the cytoplasm represents the oxidation processes (instead of the nucleus). Two other groups of cells were found also.

The Blood in Experimental Cancer.—Tinozzi examined the blood from rats with tumors produced by injection of bacilli of the tumefaciens group, together with kieselguhr and edema fluid from cancer patients. Secondary anemia and leukocytosis were especially pronounced with suppuration of the tumor. Peculiar inclusions resembling Kurloff bodies occurred in monocytes in two of his rats.

Časopis lékařů českých, Prague

64:1717-1752 (Nov. [illegible]) 1925

*Provocation of Seizure. O. Janota.—p. 1717.
*Arterial and Venous Sugar. A. Gjurić.—p. 1723.
Ankylosis of Hip Joint. J. Bárta.—p. 17[illegible].
*Demelin's Forceps D 8. F. Krečar.—p. 1732. Cont'n.
Hydro-Electric Bath and Blood Pressure. V. Z[illegible].—p. 1741. Cont'n.

Provocation of Seizure.—Janota tried to provoke epileptic seizures by deep breathing. Although he prolonged the hyperpnea experiment for forty-five minutes and even an hour, the failure was practically complete. Only two out of forty-one epileptic patients had a seizure, and these had been subject to quite frequent attacks anyway. Two epileptics and one hysterical patient reacted with hysterical seizures. He obtained no significant changes of electric excitability.

Arterial and Venous Sugar.—Gjurić confirms Lawrence's and Foster's observations on the equal height of the glucose level in the venous and capillary blood in diabetes after ingestion of glucose. By repeating the test six times within three hours, he found at times slightly higher values in the venous blood. The blood sugar is lower in the venous blood in normal subjects.

Demelin's Forceps D 8.—Krečar describes with thirty-one illustrations the mechanism of D 8 (Demelin's eighth modification of forceps). He regards it as a great advance, especially from the viewpoint of construction.

Nederlandsch Maandschrift voor Geneeskunde, Leyden

13:24[illegible] [illegible], 1925

*Acriflavine in Treatment of Wounds. Grattdijk.—p. 24[illegible].
*Wounds of the Pancreas. M. N. Roegholt.—p. 263.
*Medical Folklore in Java. M. N. Roegholt.—p. [illegible]76.
Separation of the Epiphysis. M. N. Roegholt.—p. [illegible].
Roentgen Ray Diagnosis of Fracture of the Scaphoid Bone of the Carpus. O. Schreuder.—p. 292.
Theory and Insanity in Psychanalysis. W. J. J. de S. Nolting.—p. 295.

Acriflavine in Treatment of Wounds.—Grattdijk illustrates among others the case of a small boy who had been run over by a wagon, and half the scalp torn loose, from the median line to the eyebrow, with street dirt ground into the exposed area. After the surgical toilet, the raw surfaces were flushed and dressed with a 0.05 per cent solution of acriflavine, and the scalp was replaced. He is convinced that the acriflavine is to be credited with the warding off of grave infection in this and similar cases—this is its field; not after infection has developed.

Trauma of the Pancreas.—Roegholt protests against the advice in the textbooks to drain the pancreas after trauma.

Medical Folklore in Java.—Bier's principle of venous hyperemia is applied by the Javanese in treatment of an infected finger. The finger is inserted in the rectum of a chicken and held there for hours. The pressure of the sphincter insures the stasis hyperemia. Circumcision is done at the age of 14, and anesthesia is induced for it by *making the victim stand for an hour or more in a cold stream,* with the water to his waist. He is then operated on while still chattering with the cold. The white of egg is used to staunch the blood, applied externally. The wound is cleansed every day by stepping into the cold stream, and it is then powdered with a fine earth, roasted for the purpose. Massage is used a great deal, "with much attendant hocus-pocus." The rarity of bone and joint tuberculosis may be due to the universal exposure of the limbs of children to the sun.

Hygiea, Stockholm

87:689-720 (Sept. 30) 1925

A Century of Research on the Cerebellum. C. Hesser.—p. 689.

87:753-784 (Oct. 31) 1925

The Tonsil Question: To Be Or Not To Be. I. Syk.—p. 753.

87:785-816 (Nov. 15) 1925

*Microtest for Blood Sugar. N. Johannsen.—p. 785.
Prostatectomy. F. Tengvall.—p. 795. Ctd.

Microtest for Blood Sugar.—Johannsen extols the ease, simplicity and rapidity of the Becher-Herrmann technic. The findings with it paralleled astonishingly those of the more complicated methods in his extensive experience with it. It is based on the Jaffé picric acid creatinin test. The blood (0.10 cc.) is placed in the first of a set of six tubes, containing 1.9 cc. of distilled water, and then 1.5 cc. of a 1.2 per cent solution of picric acid is added. After mixing, the fluid is decanted through a filter into a graduated test tube to the line for 2.1 cc. Then 0.3 cc. of a 4 per cent solution of sodium hydroxid is added, bringing the fluid to the 2.4 cc. mark, and it is boiled for one to one and a half minute, filling with distilled water to maintain it at the 2.4 cc. mark. The fluid is filtered anew into another test tube of the same caliber. The color of the fluid then, if it contains 0.10 per cent of sugar, is identical with that of a 0.25 per cent solution of potassium bichromate. The reagents keep well.

Norsk Magazin for Lægevidenskaben, Oslo

86:1173-12[illegible]2 (Nov.) 1925

*Mammary Cancer. I. Dahl.—p. 1173.
[illegible] Glaucoma. L. Schiøtz.—p. 12[illegible].
[illegible] Different Operations for Glaucoma. Gjessing.—p. 12[illegible].
*Hemorrhagic Nephritis After Appendectomy. H. F. Harbitz.—p. 1212.
[illegible] of Self-Strangulation. C. W[illegible].—p. 1216.
*Dyspepsia in the Breast Fed. K. U. Toverud.—p. 1217.
Mortality from Pulmonary Tuberculosis at Oslo Among Those Born Here and Born Elsewhere. A. de Besche and J. O. Jørgensen.—p. 12[illegible].
Legal Aspect of Homeopathy. K. Grøn.—p. 1252.

Mammary Cancer.—Dahl asserts that the prognosis of radical extirpation of a cancer of the breast depends on the glands. Of his eighty-three cases in this category, only 20.34, 15.79, and 14.04 per cent of those with involvement of the glands were still living at the end of three years, five years, or longer than this. Corresponding figures of survival of those without involvement of the glands were 70.83, 66.67 and 66.67 per cent.

Acute Hemorrhagic Nephritis After Appendectomy.—The patients were girls of 10 and 13, and the acute hemorrhagic nephritis developed, without fever or pains, during the confinement of convalescence from an appendectomy. Harbitz cultivated a motile bacillus (probably colon bacillus) from the urine of both girls. One had complete anuria for sixty hours.

A Common Cause of Dyspepsia in Breast-Fed *Infants.*—Toverud explains that the restlessness, vomiting and diarrhea with or without loss of weight, weakness and periods of constipation may be due to actual starvation. The mothers in the cases described were not secreting enough milk, and the children were suffering from unsuspected inadequacy of nourishment.

Ugeskrift for Læger, Copenhagen

87:1073-1098 (Dec. 3) 1925

*Carbohydrate Metabolism. IX. S. A. Holbøll and F. Feck.—p. 1073.
Pathogenesis of Jaundice. E. Meulengracht.—p. 1078. Ctd.
Injection Treatment of Varicose Veins. G. Jensen.—p. 1082.

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EXPERIENCES WITH CHOLECYSTOGRAPHY

INCLUDING OBSERVATIONS ON THE FUNCTION OF THE GALLBLADDER *

L. R. WHITAKER, M.D.

BOSTON

Cholecystography as originated by Graham and his associates [1] has not only proved to be a diagnostic agent of great value but also provides an excellent means for investigation of the function of the gallbladder.

The test is an application of the discovery by Abel and Rowntree [2] that the liver secretes the halogen compounds of phenolphthalein. Graham and Cole [1] first recommended the intravenous injection of the calcium and sodium salts of tetrabromphenolphthalein for this purpose. On account of the greater atomic weight of iodin, however, and the larger proportion of it in the salt, we estimated that sodium tetra-iodophenolphthalein should be approximately twice as opaque to roentgen rays as sodium tetrabromphenolphthalein. Extensive experimentation confirmed this belief, and proved the toxicity of the two compounds to be approximately the same. With equal toxicity and the necessity for a dose only half as large, it was obvious that the iodin salt should be superior to the bromin salt as a medium for cholecystography.[3]

Since, however, Graham and Cole in their first paper had stated that tetra-iodophenolphthalein seemed to be too toxic to permit its extensive use in man, it was decided to try the salt on a presumably normal human subject who volunteered for the purpose before it was used on patients. Accordingly, the test was made, the bromin and iodin salts being used on the same person at different times, for comparison. After injection of the bromin salt he suffered nausea, vomiting and prostration, while after the iodin salt he experienced no untoward symptoms. We were thereby encouraged to proceed with the clinical use of sodium tetra-iodophenolphthalein, which has been attended with excellent results.

In a recent article, Graham and his collaborators,[4] following a clinical and experimental study, have confirmed our findings and agree with us that sodium tetra-iodophenolphthalein is the best medium at hand for the purpose of cholecystography, though, as they have pointed out, it is slightly more variable and less stable than the analogous bromin compound.

Two methods of administration, intravenous and oral, have been developed.

INTRAVENOUS ADMINISTRATION

In general, the technic laid down by Graham and Cole for injection of the bromin salt has been followed except that a dose of 0.04 gm. per kilogram of body weight is made into a 5 per cent. solution with distilled water, filtered and autoclaved, and when ready for injection diluted to a strength of 2 per cent. with salt solution in a gravity apparatus, and run slowly into the vein. Care must be taken not to allow any of the solution to escape into the subcutaneous tissues, as there is danger of producing a slough.

The injection may be made at night or in the morning. The advantage of the injection at night is that the patient does not have to fast during the day, since he must take no food from six hours before the injection to ten hours afterward. Ten hours after injection a roentgenogram is made, the regular gallbladder technic with the Bucky diaphragm being used. If a distinct shadow results the patient is given food containing fat, and another roentgenogram is made an hour later to see whether the shadow has shrunken, an event which we [5] consider to be good evidence that the gallbladder wall maintains its elasticity (Figs. 1 and 4). If, then, a clearly outlined shadow of the gallbladder, oval or pyriform, and homogeneous in density, is obtained, which shrinks down after food, the gallbladder is considered normal, and no further tests are made. If, on the other hand, the shadow is absent after from ten to twelve hours, or very faint, or persists longer than twenty-four hours, there is presumed to be a cystic duct block or cholecystitis; if the shadow is very irregular in outline, the gallbladder is probably distorted by adhesions or fibrosis (Fig. 2); if the shadow shows "negative" areas, they are due either to gallstones (Fig. 3) or to gas in the intestines overlying the gallbladder. "Negative" areas due to gas, however, are inconstant in subsequent plates.

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[1] Graham, E A, and Cole, W. H: Roentgenologic Examination of the Gallbladder: Preliminary Report of a New Method Utilizing the Intravenous Injection of Tetrabromphenolphthalein, J A M. A **82**: 613-614 (Feb. 23) 1924. Graham, E A; Cole, W H, and Copher, G H.: Visualization of the Gallbladder by the Sodium Salt of Tetrabromphenolphthalein, ibid **82**: 1777-1778 (May 31) 1924, Roentgenological Visualization of the Gallbladder by the Intravenous Injection of Tetrabromphenolphthalein, Ann Surg **80**: 473 477 (Sept) 1924 Graham, E. A; Cole, W. H., and Copher, G H Cholecystography: An Experimental and Clinical Study, ibid. **84**: 14 (Jan 3) 1925.

[2] Abel, J. J., and Rowntree, L. G: J Pharmacol. and Exper. Therap **1**: 231-264, 1909.

[3] Whitaker, L R, and Milliken, G: A Comparison of Sodium Tetrabromphenolphthalein with Sodium Tetra Iodophenolphthalein in Gallbladder Radiography, Surg, Gynec. & Obst. **40**: 17-23 (Jan.) 1925.

[4] Graham, E A; Cole, W H, and Copher, G H: Cholecystography: The Use of Sodium Tetra Iodophenolphthalein, J. A. M. A. **84**: 1175 (April 18) 1925

[5] Milliken, G, and Whitaker, L R: The Clinical Use of Sodium Tetra Iodophenolphthalein for Cholecytography, Surg, Gynec. & Obst. **40**: 464 654 (May) 1925 Whitaker, L. R; Milliken, G, and Vogt, E C: The Oral Administration of Sodium Tetra-Iodophenolphthalein for Cholecystography, ibid. **40**: 847 (June) 1925.

Zeitschrift für Krebsforschung, Berlin

22: 455-554 (Nov. 20) 1925

Invisible Virus and Cancer. C. Lewin.—p. 455.
*Histophysiology of Cancer Cells. I. G. Roskin.—p. 472.
Treatment of Mouse Cancer. R. Roosen.—p. 480.
Local Cancer Statistics (Lower Rhine District). H. Müller.—p. 484.
Metabolism of Cancer Cell. A. Lasnitzki.—p. 531.
Glycolysis in Rat Tumors of Bacterial Origin. A. Lasnitzki.—p. 536.
*The Blood in Experimental Cancer. F. P. Tinozzi.—p. 540.
Spontaneous Rat Sarcoma. P. Cohrs.—p. 549.

Histophysiology of Cancer Cells.—Roskin's studies indicate that in the majority of the cells of mouse cancer the cytoplasm represents the oxidation processes (instead of the nucleus). Two other groups of cells were found also.

The Blood in Experimental Cancer.—Tinozzi examined the blood from rats with tumors produced by injection of bacilli of the tumefaciens group, together with kieselguhr and edema fluid from cancer patients. Secondary anemia and leukocytosis were especially pronounced with suppuration of the tumor. Peculiar inclusions resembling Kurloff bodies occurred in monocytes in two of his rats.

Časopis lékařů českých, Prague

64: 1717-1752 (Nov. 28) 1925

*Provocation of Seizure. O. Janota.—p. 1717.
*Arterial and Venous Sugar. A. Gjurič.—p. 1723.
Ankylosis of Hip-Joint. J. Bárta.—p. 1728.
*Demelin's Forceps D 8. F. Krecar.—p. 1732. C'cn.
Hydro-Electric Bath and Blood Pressure. V. Zoubek.—p. 1741. C'cn.

Provocation of Seizure.—Janota tried to provoke epileptic seizures by deep breathing. Although he prolonged the hyperpnea experiment for forty-five minutes and even an hour, the failure was practically complete: Only two out of forty-one epileptic patients had a seizure, and these had been subject to quite frequent attacks anyway. Two epileptics and one hysterical patient reacted with hysterical seizures. He obtained no significant changes of electric excitability.

Arterial and Venous Sugar.—Gjurič confirms Lawrence's and Foster's observations on the equal height of the glucose level in the venous and capillary blood in diabetes after ingestion of glucose. By repeating the test six times within three hours, he found at times slightly higher values in the venous blood. The blood sugar is lower in the venous blood in normal subjects.

Demelin's Forceps D 8.—Krecar describes with thirty-one illustrations the mechanism of D 8 (Demelin's eighth modification of forceps). He regards it as a great advance, especially from the viewpoint of construction.

Nederlandsch Maandschrift voor Geneeskunde, Leyden

13: *249-308, 1925*

*Acriflavine in Treatment of Wounds. Graftdijk.—p. 249.
*Wounds of the Pancreas. M. N. Roegholt.—p. 263.
*Medical Folklore in Java. M. N. Roegholt.—p. 276.
Separation of the Epiphysis. M. N. Roegholt.—p. 288.
Roentgen-Ray Diagnosis of Fracture of the Scaphoid Bone of the Carpus. O. Schreuder.—p. 292.
Theory and Insanity in Psychanalysis. W. J. J. de S. Nolting.—p. 295.

Acriflavine in Treatment of Wounds.—Graftdijk illustrates among others the case of a small boy who had been run over by a wagon, and half the scalp torn loose, from the median line to the eyebrow, with street dirt ground into the exposed area. After the surgical toilet, the raw surfaces were flushed and dressed with a 0.05 per cent solution of acriflavine, and the scalp was replaced. He is convinced that the acriflavine is to be credited with the warding off of grave infection in this and similar cases—this is its field; not after infection has developed.

Trauma of the Pancreas.—Roegholt protests against the advice in the textbooks to drain the pancreas after trauma.

Medical Folklore in Java.—Bier's principle of venous hyperemia is applied by the Javanese in treatment of an infected finger. The finger is inserted in the rectum of a chicken and held there for hours. The pressure of the sphincter insures the stasis hyperemia. Circumcision is done at the age of 14, and anesthesia is induced for it by making the victim stand for an hour or more in a cold stream, with the water to his waist. He is then operated on while still chattering with the cold. The white of egg is used to staunch the blood, applied externally. The wound is cleansed every day by stepping into the cold stream, and it is then powdered with a fine earth, roasted for the purpose. Massage is used a great deal, "with much attendant hocus-pocus." The rarity of bone and joint tuberculosis may be due to the universal exposure of the limbs of children to the sun.

Hygiea, Stockholm

87: 689-720 (Sept. 30) 1925

A Century of Research on the Cerebellum. C. Hesser.—p. 689.

87: *753-784 (Oct. 31) 1925*

The Tonsil Question: To be Or Not To Be. I. Syk.—p. 753.

87: *785-816 (Nov. 15) 1925*

*Microtest for Blood Sugar. N. Johannsen.—p. 785.
Prostatectomy. E. Tengwall.—p. 795. C'td.

Microtest for Blood Sugar.—Johannsen extols the ease, simplicity and rapidity of the Becher-Herrmann technic. The findings with it paralleled astonishingly those of the more complicated methods in his extensive experience with it. It is based on the Jaffé picric acid creatinin test. The blood (0.10 cc.) is placed in the first of a set of six tubes, containing 1.9 cc. of distilled water, and then 1.5 cc. of a 1.2 per cent solution of picric acid is added. After mixing, the fluid is decanted through a filter into a graduated test tube to the line for 2.1 cc. Then 0.3 cc. of a 4 per cent solution of sodium hydroxid is added, bringing the fluid to the 2.4 cc. mark, and it is boiled for one to one and a half minutes, filling with distilled water to maintain it at the 2.4 cc. mark. The fluid is filtered anew into another test tube of the same caliber. The color of the fluid then, if it contains 0.10 per cent of sugar, is identical with that of a 0.25 per cent solution of potassium bichromate. The reagents keep well.

Norsk Magazin for Lægevidenskaben, Oslo

86: 1173-1292 (Nov.) 1925

*Mammary Cancer. E. Dahl.—p. 1173.
Tangential Sclerectomy for Glaucoma. I. Schiøtz.—p. 1202.
Results of Different Operations for Glaucoma. Gjessing.—p. *1208.*
*Hemorrhagic Nephritis After Appendectomy. H. F. Harbitz.—p. *1212.*
Case of Self-Strangling. C. Wingard.—p. 1216.
*Dyspepsia in the Breast-Fed. K. U. Toverud.—p. 1217.
Mortality from Pulmonary Tuberculosis at Oslo Among Those Born There and Born Elsewhere. A. de Besche and J. O. Jørgensen.—p. *1229.*
For and Against Homeopathy. K. Grøn.—p. 1253.

Mammary Cancer.—Dahl asserts that the prognosis of radical extirpation of a cancer of the breast depends on the glands. Of his eighty-three cases in this category, only 20.34; 15.79, and 14.04 per cent of those with involvement of the glands were still living at the end of three years, five years, or longer than this. Corresponding figures of survival of those without involvement of the glands were 70.83; 66.67 and 66.67 per cent.

Acute Hemorrhagic Nephritis After Appendectomy.—The patients were girls of 10 and 13, and the acute hemorrhagic nephritis developed, without fever or pains, during the confinement of convalescence from an appendectomy. Harbitz cultivated a motile bacillus (probably colon bacillus) from the urine of both girls. One had complete anuria for sixty hours.

A Common Cause of Dyspepsia in Breast-Fed Infants.—Toverud explains that the restlessness, vomiting and diarrhea, with or without loss of weight, weakness and periods of constipation may be due to actual starvation. The mothers in the cases described were not secreting enough milk, and the children were suffering from unsuspected inadequacy of nourishment.

Ugeskrift for Læger, Copenhagen

87: 1073-1098 (Dec. 3) 1925

*Carbohydrate Metabolism. IX. S. A. Holbøll and E. Fock.—p. *1073.*
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cent. of whom showed reactions severe enough to cause headache, and nausea and vomiting, but in no case dangerous. In twenty-eight of these patients on whom exploratory laparotomies were made the diagnosis by cholecystography proved to be correct in 93 per cent., as against 70 per cent. by clinical methods.

ORAL ADMINISTRATION

Through the cooperation of Davies, Rose & Co. of Boston, manufacturing chemists, we have developed an oral method for the administration of sodium tetraiodophenolphthalein in "enteric" coated pills.[6] The "enteric" coating is necessary because the salt is sufficiently irritating to the gastric mucosa to produce nausea and vomiting. It seemed that pills would be superior to capsules for the reason that with capsules the concentrated salt would come in contact with the intestinal mucosa on solution of the capsule, while the pill mass, breaking up more slowly, the salt being dissolved and diluted meanwhile, would be less irritating. Phenyl salicylate was the first coating material used but was not ideal, partly on account of the slight danger of poisoning from phenyl salicylate, but chiefly from the fact that its low melting point might cause the pills to be spoiled if stored in a warm place. Stearic acid, which is being used at present, does not have these disadvantages, and appears to work very well. Menees and Robinson,[7] who were the first to develop an oral method for cholecystography (using sodium tetrabromphenolphthalein) have employed, with good results, formaldehyd-treated capsules as an "enteric" coating, the salt having been made into a thin paste with olive oil before being put into the capsules.

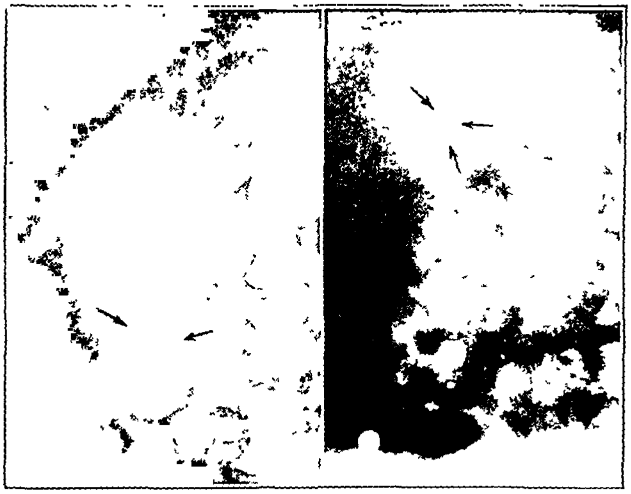

Fig 1.—Oral method normal gallbladder; left, sixteen hour film, patient fasting; right, same patient one hour after taking food rich in fat (butter) The marked reduction in size of shadow may be noted; this illustration should be compared with Figures 6 and 7.

The dosage we have used with the iodin salt in stearic acid coated pills is 5 grains (one pill) for each 10 pounds of body weight (up to twenty pills) in stout patients (0.3 gm. for each 4.5 kg.), and 5 grains for each 12 to 15 pounds of body weight in thin patients (0.3 gm. for each 5.4 to 6.8 kg.). These are larger doses than those now being given by others, but we believe that the necessity for reliability of the test outweighs the discomfort due to symptoms of gastrointestinal irritation which sometimes occur, though they are never dangerous. The instructions to the patient for the oral administration are as follows: A light supper without meat is eaten at 6 p. m. Starting at 8 p. m., four pills are taken with half a glass of water every half hour until the required number is taken. During this process the patient should lie on his right side and for an hour or more thereafter, drinking considerable water until bedtime. (This facilitates the passage of the pills through the pylorus.) The pills must not be broken. No cathartic must be taken. No food must be eaten until after the first roentgenogram is made.

The roentgenographic technic is that usually employed for gallbladder work, the Bucky diaphragm being used, and several exposures being made at a sitting. The first roentgenogram is made from sixteen to eighteen hours after the first pills were taken. If a good shadow is obtained, food containing fat is given and another roentgenogram made an hour later. Reduction of the shadow in size indicates that the gallbladder wall maintains its elasticity (Fig. 4). If, in addition, the shadow is homogeneous with a regular outline, the gallbladder is considered normal. If, on the other hand, no shadow has been produced, or it is very faint or persists longer than twenty-four hours, the gallbladder is probably abnormal. If the shadow is mottled with "negative" areas, stones are indicated (Fig. 3). In doubtful cases the results should be verified by the use of the intravenous method, which is slightly more accurate than the oral method.

Of the first 100 persons given the drug orally, sixty-eight suffered no reaction, eight had nausea, twelve had nausea and vomiting, and twelve had diarrhea. None of the reactions were severe enough to be at all alarming. Out of twenty-five supposedly normal subjects in the series, twenty-three showed gallbladder shadows. With approximately half of the seventy-five patients, no shadows were obtained. Most of these, however, had histories suggestive of gallbladder disease. Out of thirteen of these patients showing no shadow by the oral method, eleven were subsequently checked up by the intravenous method and shown to have a pathologic condition of the gallbladder.

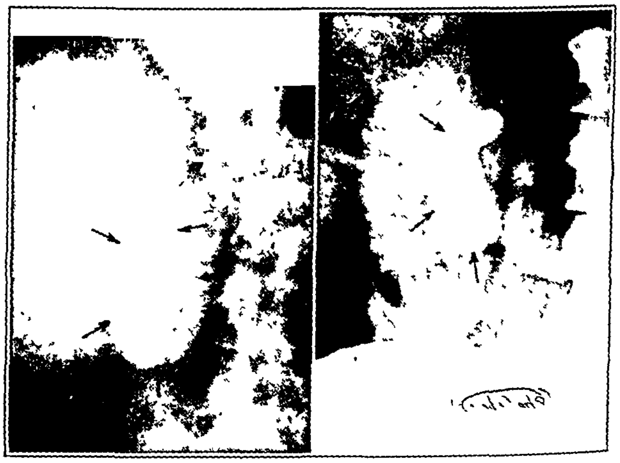

Fig 2.—Intravenous method: left, six hour film; the irregular shape and mottling in lower end of shadow may be noted; right, irregularity and mottling still seen, indicating adhesions and stones, but the shadow is reduced in size one hour after eating fat, showing that, although pathologic, the gallbladder wall maintains some of its elasticity.

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[6] Whitaker, Milliken and Vogt (Footnote 5, second reference).

[7] Menees, T. O., and Robinson, H. O.: Oral Administration of Sodium Tetrabromphenolphthalein: Preliminary Report, Am. J. Roentgenol. 13: 368 (April) 1925.

We believe that the intravenous use of sodium tetraiodophenolphthalein is a safe and reliable diagnostic procedure. The advantage of the oral method as compared with the intravenous is that, though not as reliable, it is more convenient and can be used in ambulatory patients. By employing it we can rule out a large proportion of normal persons suspected of having gallbladder disease.

CHOLECYSTOGRAPHY AS A MEANS FOR INVESTIGATION OF GALLBLADDER FUNCTION

Previous to the discovery of cholecystography by Graham and Cole, the human gallbladder could be inspected only at the time of operation and then under unfavorable conditions. This method, however, permits us to study the gallbladder without disturbing in any way its normal physiologic environment.

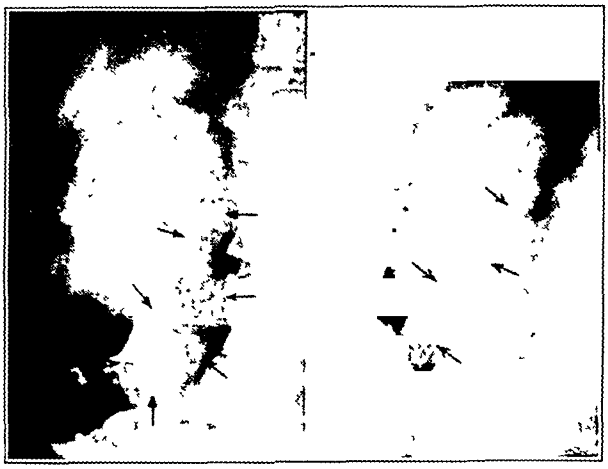

Fig 3.—Oral method left, sixteen hour film, faint shadow of gallbladder with mottling (stones); right, one hour after taking mixed food shadow is shrunken in size The faintness of the shadow and the mottling indicate a pathologic gallbladder, yet, as in Figure 2, the reduction in size of shadow after food shows elasticity of gallbladder wall still present.

The rapid reduction in size of the cholecystic shadow after the ingestion of food suggested an investigation of the effect of the various food elements and of certain drugs on the shadow, which is now being carried out in the department of [illegible] 'he Peter Bent Brigham Hospital, [illegible] of Dr. M. C. Sosman, and will subsequently be reported in detail.[8]

The first demonstration that complete collapse of the gallbladder in mammals could be induced naturally, by appropriate food, was made by an anatomist, Dr. Edward A. Boyden of the Harvard Medical School. In a paper[9] presented at the December, 1922, meeting of the American Association for the Advancement of Science, he showed that a meal rich in fat (egg-yolk and cream) "induces the following cycle of changes in the gallbladder of the cat: (1) a period of slow emptying (two hours); (2) a collapsed or resting period marked by a rearrangement of the mucosa (five hours), and (3) a period of rapid filling and bile concentration." In contradistinction to the effect of fats, he found that pure protein (in the form of egg-white) or carbohydrate (in the form of rice flavored with Liebig's extract) failed to produce any marked diminution in the size of a distended gallbladder. Mixed and superimposed diets produced various modifications of this cycle. In advance of final publication, Dr. Boyden has kindly placed all his results at our disposal.

The results so far obtained by Dr. Sosman and his associates with cholecystography in man and others of us[8] with the dog amply confirm Dr. Boyden's work with the cat. Mixed foods caused a reduction of the shadow beginning approximately thirty minutes after ingestion, which was at a maximum after two hours. Of the food elements, fat invariably produced the most marked reduction (Fig. 1); peptone and meat protein, a moderate reduction; egg albumin, slight reduction; starch, no reduction in three out of four cases; the various sugars, no reduction. A mixture of egg-yolk and cream (Boyden meal) caused the most rapid reduction, with complete disappearance of the shadow in from two to three hours, which normally required about twenty-four hours (Fig. 4).

Hydrochloric acid by mouth and duodenal tube effected no change in the cholecystogram. Sodium bicarbonate by mouth caused a slight increase in size of the shadow; by duodenal tube it produced no change.

Magnesium sulphate intraduodenally produced moderate reduction of the shadow, but by mouth in one case, no change.

Alcohol gave conflicting results, since it produced a slight reduction in one case and a questionable increase in the size of the shadow in another.

No definite effect on the cholecystogram was produced by atropin, pilocarpin, pituitary extract or epinephrin.

On account of the much discussed Meltzer-Lyon test and nonsurgical biliary drainage, magnesium sulphate was one of the first substances considered. Silverman and Menville[10] had previously published the results of an investigation on this problem by means of sodium tetrabromphenolphthalein from which they concluded that, "since nonsurgical biliary drainage reduces the size and alters the shape of the gallbladder, drainage of the gallbladder (after intraduodenal magnesium sul-

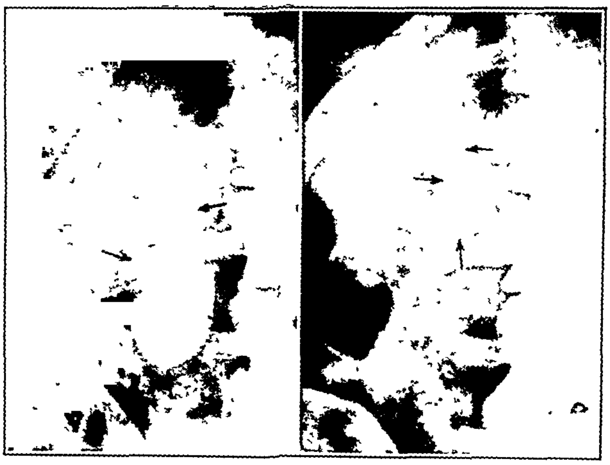

Fig 4.—Oral method: normal gallbladder, left, sixteen hour film showing a large homogeneous shadow (except for gas in intestine) with a regular outline, right, tremendous reduction in size of the shadow one hour and forty minutes after taking food rich in fat (egg yolks and cream); the shadow had completely disappeared in three hours.

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[8] Edson, P J.; Vogt, E C, and Whitaker, L R: The Physiology of the Gallbladder: A Cholecystographic Study, Department of Roentgenology, Peter Bent Brigham Hospital and Laboratory for Surgical Research, Harvard Medical School

[9] Boyden, E A: Abstr, Anat Rec. **24:** 388 389 (Jan.) 1923 To be published in full (Anat Rec, August, 1925) as the Effect of Natural Foods on the Distention of the Gallbladder, with a Note on the Changing Pattern of the Mucosa under Distention and Collapse

[10] Silverman, D N, and Menville, L J: Observations of Visualized Gallbladder by the Graham Method with Reference to the Effect of Nonsurgical Biliary Drainage. Preliminary Report, J. A. M. A. **84:** 416-418 (Feb 7) 1925.

phate) does take place." We have confirmed this opinion, but we have found that almost invariably the decrease in the size of the gallbladder shadow is greater after the patient has taken food (Fig. 5), especially fat, than after the intraduodenal injection of magnesium sulphate (Fig. 6). This raises a question as to the value of nonsurgical biliary drainage by such means. Why subject a patient to the discomfort of the duodenal tube if the gallbladder drains just as well every time he eats? (Compare Figs. 1, 4 and 5 with 6 and 7.)

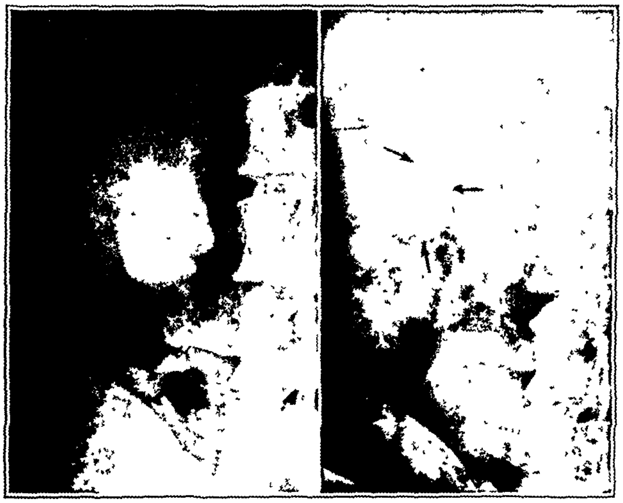

Fig. 5.—Intravenous method: normal gallbladder; left, nine hour film; right, reduction in size of shadow two and one half hours after taking mixed food. Same subject as in Figure 6.

As stated in a previous paper,[11] the rapid reduction of the cholecystic shadow after the ingestion of food seemed to indicate an outpouring of bile from the gallbladder for digestion. In many instances, both with patients and with dogs, we have seen such marked reduction and rapid disappearance of the shadow after the giving of food as to leave little doubt that we were dealing with an emptying of the gallbladder through its duct and not merely with the absorption of bile through its wall. We would consider this obvious were it not for the ingenious theory recently proposed by Sweet[12] in this country and Halpert[13] at Prague (now at Johns Hopkins) that no bile which enters the gallbladder ever leaves it by way of the cystic duct—the former author basing his contentions on the mechanical hindrances to the outflow of the bile and the known capacity of the gallbladder for concentration; the latter finding in this theory the best explanation for most pathologic conditions of the gallbladder, including the formation of calculi. But other workers have presented evidence contradictory to this belief. That the absorption of substances somewhat comparable to cholesterol is a very slow process has been brought out by Mentzer,[14] who found that in dogs a very little emulsified milk fat stained with sudan III was absorbed into the blood vessels of the gallbladder in three hours.

Copher[15] also has observed that by ligating the common bile duct in dogs after a shadow of the gallbladder had been produced by sodium tetrabromphenolphthalein, the shadow was retained for several days, whereas normally it disappears in from thirty to forty hours. This indicates that the absorption of substances like tetrabromphenolphthalein from the gallbladder is a very slow process.

Conversely, Maddock and I[11] have found in dogs that only very questionable shadows of the gallbladder could be produced with sodium tetra-iodophenolphthalein after the common bile duct had been ligated, which may indicate that the absorption of concentrated bile from the gallbladder is not rapid enough to let in through the cystic duct a sufficient quantity of bile containing the dye to produce a shadow.

Further evidence on the question as to the relation of absorption to emptying of the gallbladder is furnished by the correlation of observations made in a case of Dr. Menees and in two of ours. Dr. Menees found, with a patient showing stones, who had been seized with biliary colic after a cholecystic shadow had been produced, that the shadow remained for twenty-one days, when the patient was lost sight of. Presumably, a stone had blocked the cystic duct, and the pathologic gallbladder could not absorb the dye. We observed that in two patients with gallbladders containing stones, also presumably pathologic, the shadow was markedly reduced in size one hour after the ingestion of fat (Figs. 2 and 3). The inference is that the contents of the gallbladder in those cases found their way out by some other route than by absorption—probably through the cystic duct.

In justice to those who hold that the gallbladder empties only by absorption of its bile it should be said that, as observed by Menees and ourselves, the cholecystic shadow in normal subjects often becomes slightly denser as it decreases in size after the ingestion of food. This could, however, simply indicate a more rapid concentration of the contents of the gallbladder during digestion. The foregoing evidence indicates that emptying of the gallbladder by absorption is not probable, while the following seems to prove that it empties through the cystic duct.

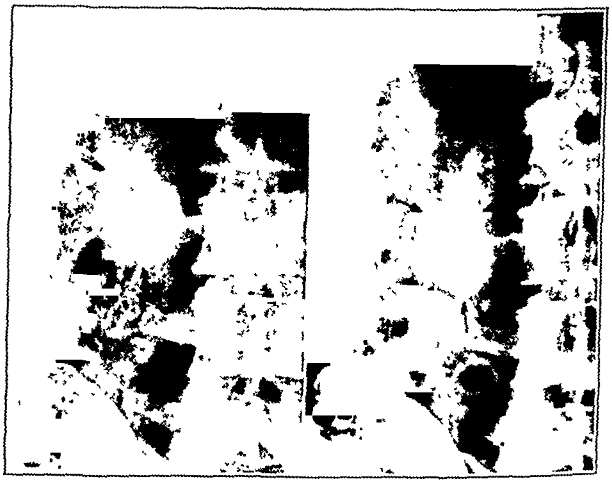

Fig. 6.—Oral method: same subject as in Figure 5; left, sixteen hour film; right, two hours after intraduodenal injection of magnesium sulphate; the amount of reduction in size of shadow should be compared with that in Figure 5.

In freshly laparotomized cats, which have been fasting, dark green bile from the gallbladder may frequently be seen in the cystic duct and sometimes extending even to the lower end of the common bile duct, while the hepatic ducts are filled with yellow bile; and once we had the experience of seeing (a moment after the liver of an anesthetized cat had been carefully lifted out of the body cavity) the dark green bile from the gallbladder suddenly shoot down the thin walled cystic duct and common duct into the duodenum. These observations agree with the evidence from the Meltzer-Lyon test by which dark green bile is collected from the duodenum following the intraduodenal injection of magnesium sulphate. Winkelstein and Aschner[16] have shown in dogs that eighteen hours after the injection of methylene blue into the gallbladder, with a cannula in the ampulla of Vater, the dye could be found in the intestine; and also that twenty-one hours after the injection of phenoltetrachlorphthalein into the gallbladder, magnesium sulphate or gastric chyme in the duodenum would cause an appearance there of the dye.

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[11] Milliken and Whitaker (Footnote 5, first reference).

[12] Sweet, J. E: The Gallbladder; Its Past, Present and Future (Mutter Lecture, Philadelphia, Dec. 7, 1924, Internat. Clin 1, Series 34.

[13] Halpert, B.: Neue Wege in der Gallenblasenforschung, I, Orthologie der extrahepatischen Gallenwege, II, Zur Orthologie and Pathologie die Gallenwege, Med. Klin., 1924, Nos. 13 and 52.

[14] Mentzer, S. H.: Cholesterosis of the Gallbladder and Pathogenesis of Biliary Calculi, Read before the American Association of Pathologists and Bacteriologists, Washington, D. C., May 6, 1925.

[15] Copher, G. H.: Cholecystography: Appearance and Disappearance of Shadow, J. A. M. A. 84: 1563-1564 (May 23) 1925.

Mentzer[14] has also observed in dogs that emulsified milk fat stained with sudan III after being injected into the gallbladder appeared at the sphincter of Oddi in three hours.

Furthermore, Abramson,[17] after injecting neosilvol into the ballbladder of a dog through a cholecystostomy tube fixed in place five days previously, noted by fluoroscopy that after ten minutes globules of the opaque solution passed down the cystic duct and common duct and into the duodenum. Using iodized oil in the same manner, except first feeding the dog a meal rich in fat and taking roentgenograms at intervals, we have confirmed this finding, not only observing the opaque oil in the ducts at intervals after ingestion of the meal, but at the same time noting a very marked decrease in the size of the gallbladder.

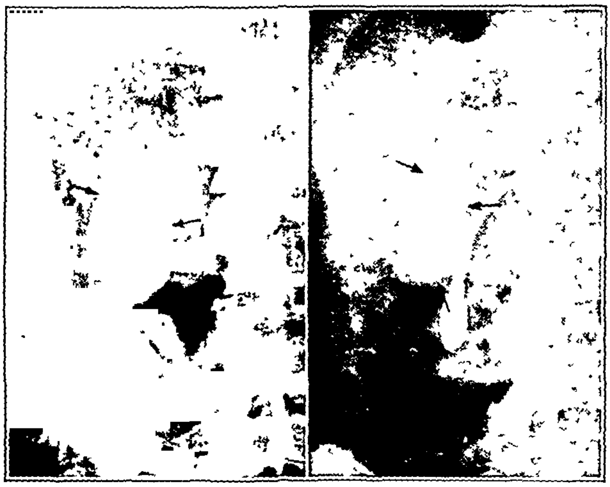

Fig. 7.—Oral method; normal gallbladder; left, sixteen hour film; right, two hours after the intraduodenal injection of magnesium sulphate; the amount of reduction in size of shadow should be compared with that in Figures 1 and 4.

These links of evidence then—that absorption from the gallbladder of substances other than water is a very slow process, and that bile can leave by way of the cystic duct, together with the evidence from Dr. Boyden's work with cats and ours by the use of cholecystography that the gallbladder can be made to empty in from three to six hours by the ingestion of fat—would seem to forge a chain of proof that, in response to an appropriate food stimulus, the gallbladder pours out its contents into the duodenum.

SUMMARY

1. Sodium tetra-iodophenolphthalein is, we believe, the most satisfactory medium so far employed for the purpose of cholecystography.

2. The intravenous method of administration is very reliable, and is not dangerous. The oral method is simpler and more widely applicable, though not quite so accurate as the intravenous.

3. Cholecystography furnishes a means for the study of gallbladder function. Our observations supported by others seem to prove that the gallbladder empties its contents into the duodenum, after the ingestion of foods rich in fat, for the purpose of digestion.

4. Evidence has also been obtained which reflects doubt on the value of nonsurgical biliary drainage by magnesium sulphate, since the gallbladder drains more completely after the ingestion of fat than after the intraduodenal administration of that drug.

ABSTRACT OF DISCUSSION

Dr. George E. Pfahler, Philadelphia: Were any tests made on the emptying time of the gallbladder in pathologic conditions by means of this Boyden meal?

Dr. Lester R. Whitaker, Boston: The patient with gallstones, who had a shrunken gallbladder, did not have the Boyden meal. She had ordinary food fairly rich in fat, bread and butter and cocoa. I do not doubt that the Boyden meal would have been more effective, but this is all the evidence we have on that question.

Dr. C. E Piersall, Reno, Nevada: Were any controls made showing how promptly the gallbladder will empty if the patient fasts? One patient (and it happened to be the first case in which I tried this injection of tetrabromphenolphthalein) acted so violently while the dye was being injected that only 5 c.c. was administered. Before that injection, we took several gallbladder films and also studied the gastro-intestinal tract. A pathologic condition of the gallbladder was evident from gastro-intestinal study, but we were not able to show stones in the gallbladder. After the injection with dye we thought we saw several stones in the gallbladder. At operation there were no stones there, but there were stones in the head of the pancreas.

Dr. Lester R. Whitaker, Boston: In regard to the question of controls as to how long the gallbladder shadow remained with the patient fasting, I must admit that we do not have any controls of that on patients because they will not fast. I mean they are so hungry that they insist on eating soon after the test; but normally, when the patient eats a regular diet, the gallbladder shadow lasts for about twenty-four hours, as against from two to four hours after the Boyden meal. Dr. Boyden found that the gallbladder in cats will remain distended while the animals are fasting. I do not know just how long he has kept them without food, but as long as he does the gallbladder remains full.

Cause of Stealing.—There is a common form of stealing in which money and articles of value are stolen from the parents, and the parents only. In such cases it is almost certain the parents are depriving the child of something to which it has a right, such as proper arrangements for fresh air, exercise or suitable recreation, or even proper education, or education in some special accomplishment, suited to the child's station in life. Among such unsatisfactory parents we can include well-to-do people who never give their children any pocket-money, but spend freely on themselves. In many cases of juvenile delinquency, the problem is the parents.—Potts, W. A.: *J. Ment. Sc.* **71**:677 (Oct.) 1925.

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[16] Winkelstein, A., and Aschner, P. W.: Experimental Studies on the Entrance of Bile into the Duodenum, Am. J. M Sc **169**: 679 (May) 1925

[17] Abramson, H. A.: Visualization of the Gallbladder of the Dog by the Roentgen Ray, Proc. Soc. Exper. Biol. & Med. **21**: 407, 1923-1924.

PERINEAL PROSTATECTOMY

TWENTY-FIVE YEARS' EXPERIENCE WITH THE AUTHOR'S TECHNIC

PARKER SYMS, M.D.
NEW YORK

In 1900, I described a method of performing prostatectomy which I had developed at that time. As twenty-five years have elapsed, it seems opportune to review the subject.

The changes from the original method are to be found in: (1) the examination and preoperative care of the patient; (2) the method of anesthesia; (3) the details of the operative technic, and (4) the postoperative treatment of the patient.

EXAMINATION AND PREPARATION OF THE PATIENT

My present procedure in connection with examining and preparing the patient can be summed up as follows:

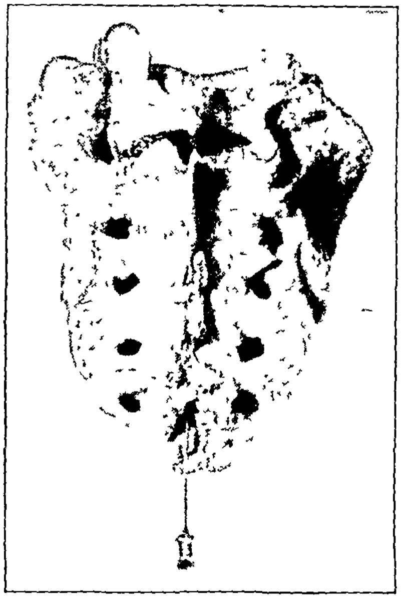

Fig 1.—Posterior surface of sacrum; needle in hiatus sacralis

1. A history is taken carefully and a general examination of the patient made.
2. A rectal examination is made to determine whether or not the patient has an enlarged prostate and whether or not the prostate appears to be cancerous.
3. A catheter is introduced gently to determine whether or not the patient has residual urine, and if so how much.
4. A Wassermann test and other examinations are made to exclude the question of bladder crisis due to tabes.
5. A roentgenogram is taken to determine the question of calculus.
6. An examination is made to determine the condition of the cardiovascular system. Blood pressure is an important item. The cystoscope should not be employed at this stage of the proceedings.
7. The most essential thing to determine is the condition of the kidneys.

Most of our knowledge of the physiologic effects of back pressure on the kidneys has been developed within the last few years. The same is true as to our knowledge of kidney efficiency and inefficiency. The study of blood chemistry and the various kidney function tests are nearly all new. They were not at our command twenty-five years ago. A careful examination of the kidney function should be employed in every one of these cases; if it is found to be below par, proper treatment must be instituted before operation is attempted.

Prostatic obstruction, producing residual urine and frequent and difficult urination, results in back pressure which is transmitted through the ureters to the kidney pelvis. Normally, the hydrostatic pressure in the ureters is zero.

As this back pressure leads to disturbance of kidney function and later to damage of the kidney structure, it should be relieved; and this should be done by gradual, never sudden, decompression of the kidneys. It may be accomplished by systematic catheterization. If not, drainage should be instituted. The best way is by the introduction of a self retaining catheter through a perineal section. The bladder sphincter being intact, the reduction of pressure can be controlled at will.

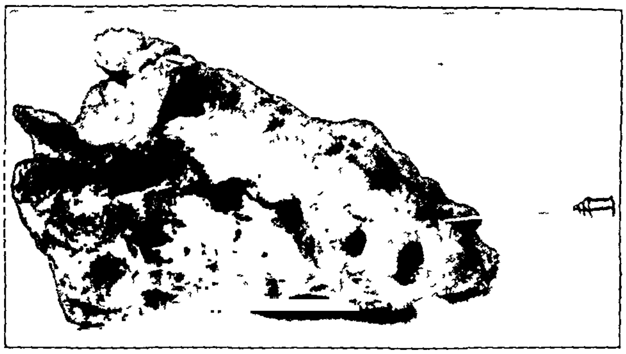

Fig 2.—Lateral view of sacrum; needle entering canal.

If the bladder is opened suprapubically, the patient will have all the dangers of sudden decompression which would be attendant on a one stage suprapubic prostatectomy.

In my opinion, the two stage operation should not be resorted to as a routine. It should be reserved for cases in which it is needed; and when it is employed, the bladder drainage should be through the perineum and not through a suprapubic cystotomy.

While full heed should be given to chemical examination of the blood and to all the kidney function tests, I feel that we can be quite liberal in our interpretations because we do not use a general anesthetic. Sacral anesthesia has given us a new opportunity.

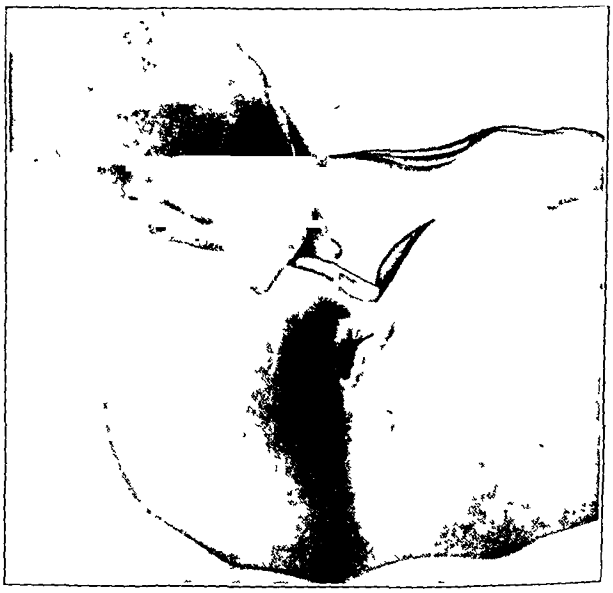

Fig 3.—Simple median incision in perineum. There is no dissection and only a single sweep of the knife.

A patient who can improve from a low level to a higher one, though his condition is not ideal, may be considered a safe risk. These patients should be given large quantities of fluids, and careful attention to their bowels is important.

Repeated blood examinations and kidney function tests should be made, and when the patient appears to be at his optimum, if his condition may be considered reasonably satisfactory, we can proceed with the prostatectomy with little anxiety; for median perineal prostatectomy, under sacral anesthesia, entails very little risk.

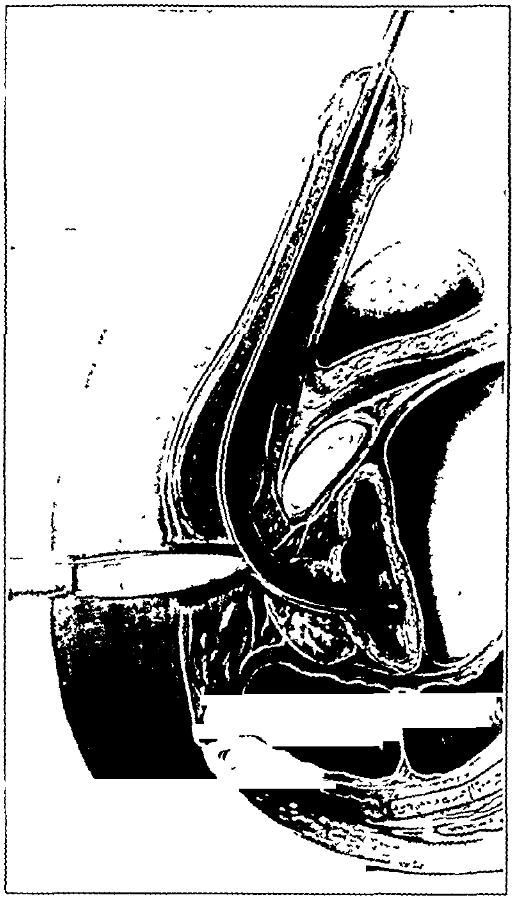

Fig 4—Knife entering the lithotomy staff and dividing the membranous urethra.

THE CYSTOSCOPE

The cystoscope is not necessary for the diagnosis of prostatic obstruction, but it may be of great aid in detecting intravesical conditions associated with or attendant on it, such as calculi, diverticula and neoplasms. It should be employed in these cases only when we are about to operate. The introduction of a straight, rigid instrument through a tortuous, obstructed canal means a certain amount of traumatism.

This will be of little moment when the bladder is about to be opened and drained. Otherwise, it may and often does result disastrously. Again, there is no need of producing sacral anesthesia twice when everything necessary can be done under one administration.

ANESTHETIC

To my mind nothing more important has been contributed to the safety of these patients than is to be found in the employment of sacral anesthesia.

Thoroughly satisfactory anesthesia can be produced in nearly 100 per cent. of the cases by the simple injection of a proper solution of procain into the sacral canal. If found necessary, parasacral injections can be supplemented.

Sacral anesthesia has practically done away with pneumonia as a hazard, and it has done away with the dangers of uremia which could be attributed to the administration of a general anesthetic. It has taken many patients out of the inoperable class. In fact, it is one of the greatest boons to perineal prostatectomy.[1]

OPERATIVE TECHNIC

As to the technic of the operation itself, I have made really very little change. I have always employed a median perineal section.

At one time I made a transverse incision through the sheath of the prostate, through which the lobes were exposed and enucleated. Now I make a vertical incision through the sheath on either side and enucleate first one lobe and then the other.

For a long time, I employed my rubber tractor, and I would be glad to do so still, but I have found great difficulty in having it properly manufactured. Today, I use Hugh Young's tractor, which is a fairly satisfactory substitute.

At one time, I employed a large double drainage tube so that the bladder could be constantly flushed. At present, I use a small perineal catheter, for I scarcely irrigate the bladder at all.

Formerly, I used a large amount of packing in the wound. Today, I pack the wound very loosely; of course, this packing is simply introduced into the sheath, into the spaces from which the prostate was removed.

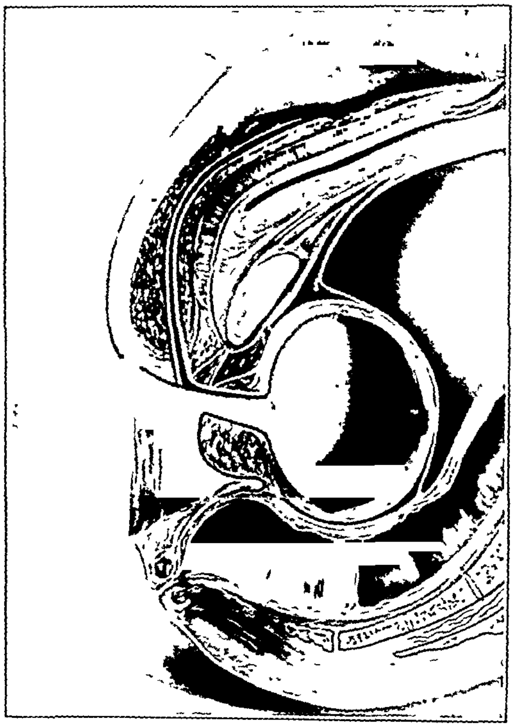

Fig 5—Syms' rubber tractor within the bladder, pulling prostate toward the surface.

The temporary suture which holds the packing in is tied loosely so as not to dam blood back into the bladder.

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[1] Details as to the administration of sacral anesthesia may be found in the following. Syms, Parker: Sacral Anesthesia, A Preliminary Report, M Rec 95:991 (June 14) 1919; Sacral Anesthesia as Applied to Genito-Urinary Surgery, Internat. J. Surg, June, 1921; Prostatectomy Under Sacral Anesthesia, New York State J. Med. 24:843 (Sept.) 1924.

The operation is performed with the aid of vision and is undoubtedly accomplished with more precision than in earlier years.

My present method of operating can be described under the following steps:

1. Sacral anesthesia having been administered, and with the patient in the lithotomy position, a Little's lithotomy staff is introduced into the bladder. A median perineal section is made, extending from just behind the bulb to a point just in front of the rectum. A narrow scalpel is introduced into the groove of the staff, and the membranous urethra is opened to the apex of the prostate.

2. The prostatic urethra is dilated by passing the index finger into the bladder. A Young's tractor is introduced into the bladder and by blunt dissection all the tissues overlying the rectum are pushed back, exposing the dome shaped sheath covering the prostate.

3. With the wound held open with right angle retractors, a vertical incision is made through the sheath, on each side of the median line. The incisions expose the prostatic lobes, which can be clearly seen and recognized. The lobes are enucleated through these vertical openings, care being taken to work close to the lobes and not to lacerate or tear the sheath which contains the venous plexus.

4. The tractor is withdrawn and the finger is introduced into the bladder to explore for intravesical lobes. A pedunculated lobe can be readily pulled through the bladder neck and removed in plain sight.

5. A 30 F. catheter is introduced into the bladder through the open urethra. A light gauze packing is inserted into the spaces from which the lobes have been removed. A silkworm suture tied around the catheter secures it to the upper part of the wound. A single suture, tied loosely, is placed near the middle of the wound. These sutures are temporary.

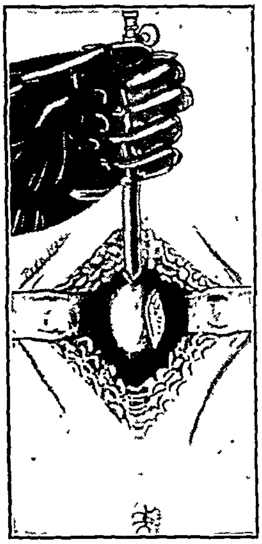

Fig. 6. — Hugh Young's tractor in situ. Incision in sheath of prostate ready for enucleation.

Median perineal prostatectomy as I perform it is as simple as can be, and there is no danger of wounding the rectum. Ample and satisfactory exposure can be obtained so that the work is done under vision.

The wound, being an open one, is as free as may be from the danger of infection and inflammation.

Perineal prostatectomy is conceded to show a smaller death rate than suprapubic prostatectomy.

One author has reported 198 consecutive cases without a death. This cannot be attributed to the personal skill of this operator, for while he was exclusively performing suprapubic prostatectomies his mortality rate was high.

The final functional results, as far as the bladder is concerned, are as good as those following suprapubic prostatectomy, if not better. It has been many years since I have had any failures in this particular.

As to convalescence, there can be no comparison, as o both brevity and comfort. I am justified in expectng my patients to be out of bed within from twenty-four to forty-eight hours after operation, to have bladder control and to be able to go about in comfort within a week.

In 1917,[2] *I* reported a case of a patient who acted as a guide, bringing several other patients to the Academy of Medicine from the Bronx, one week from the day of his operation. He was practically a well man.

Recently, my neighbor, Dr. J. Bayard Clark, has been interested with me in some patients who were able to report to the office within five or six days from the time of their operations.

At that period they had open, but healing, simple perineal wounds. They had restored bladder function. They could hold their urine. They could wear their clothes and go about in normal comfort.

Dr. F. M. of Cuba, N. Y., came to my office on the sixth day after his operation. He said he could have come perfectly well the first day; his tube was out and he had good bladder control.

It is high time for genito-urinary surgeons to weigh the facts as to the comparative merits of suprapubic and perineal prostatectomy. They should familiarize *themselves with the different methods and use the best.*

In my opinion, suprapubic prostatectomy should be abandoned as a routine procedure.

114 East Fifty-Fourth Street.

OSTEOMYELITIS OF THE FRONTAL BONE AS A COMPLICATION OF FRONTAL SINUSITIS *

ALBERT E. BULSON, Jr., M.D.
FORT WAYNE, IND.

Osteomyelitis of the frontal bone as a complication of frontal sinus suppuration is a relatively rare condition. A search of much of the American and European literature for thirty years back discloses reports of a total of fifty-five cases, in thirty-seven of which death occurred. The nature and the etiology of some of those cases may be questioned, owing to the incompleteness of the reports. Out of this total number of fifty-five cases, twenty-eight may be classed as occurring as a complication of chronic suppuration of the frontal sinus, twenty-one of which resulted in death and seven in recovery. In only eight of these twenty-eight chronic cases, in all of which operation was performed, was osteomyelitis discovered at the time of the first operation; four of the eight patients died and four recovered. In twenty cases, the osteomyelitis developed subsequent to operative attention for the sinusitis, and subsequently required operation for the osteomyelitis, the result being seventeen deaths and three recoveries. Gerber,[1] in his analysis of cases in 1909, found a similar proportion of cases of osteomyelitis developing subsequent to operative intervention, and was led to make the remark: "What operative error is responsible for this grave sequel we do not know, for it befalls all, old experienced operators as well as tyros."

Of this total of fifty-five cases, twenty-seven occurred as a complication of acute suppuration of the frontal sinus (in all of which operation was performed), resulting in sixteen deaths and eleven recoveries. In eighteen of the acute cases, the osteomyelitis was discovered at operation, and resulted in ten deaths and eight recoveries. Nine of the twenty-seven patients having acute osteomyelitis developed the disease after the first operation, and of these six died and three recovered. Three of the acute cases were what may be called spontaneous or fulminating osteomyelitis occurring coincidentally with the development of the acute frontal sinusitis, all of which resulted in death. These spontaneous cases occurred without evidence or history of previous nasal trouble, though it is quite possible and even probable that most of them may have occurred as a direct result of lighting up a latent infection of which previously there had been no discoverable evidence. At all events, while osteomyelitis of the frontal bone under any circumstances is a comparatively rare and serious affection, as evidenced by the limited number of cases reported in American and European literature, those cases which develop spontaneously or fulminantly are still rarer, with death resulting in all cases reported. It is one of the latter, with recovery of the patient, that I report here.

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[2] Syms, Parker: Ann. Surg 65: 382, 1917.

* Read before the American Academy of Ophthalmology and Otolaryngology, at Chicago, Oct. 21, 1925.

[1] Gerber, P. H.: Osteomyelitis, Berlin, S Karger, 1909, pp. 125-140.

D. I., aged 20, a motor inspector, was referred to me by the General Electric Company, Aug. 16, 1924. The previous history was negative, the patient having had neither serious illness nor nasal trouble. Late in the afternoon of August 14, he received a comparatively mild blow from a screw which slipped and flew from a screw driver, striking him at the root of the nose, just beneath the left eyebrow, but without producing a visible wound of the skin surface or even evidence of a bruise. Four or five hours after the accident, there was some localized headache in the left frontal region, and the following morning, about fourteen hours after the accident, there was considerable swelling at the root of the nose, between the eyes, and an increase in the general left-sided headache, for which the family physician prescribed sedatives. On the following day, both the pain and the swelling had increased and the patient had 2 degrees of fever.

On the third day, when I first saw the patient, the symptoms were more marked, and the edema involved the left upper eyelid and extended to a point on the forehead about 1 inch above the root of the nose. There was also considerable congestion and chemosis of both the ocular and the palpebral conjunctiva. As a localized infection of the orbit was suspected, a deep incision was carried into the orbit just above the inner canthus, but not penetrating the bone, with the evacuation of a small quantity of serosanguineous fluid. The wound was injected with a 5 per cent. alcoholic solution of mercurochrome-220 soluble, and hot moist compresses were ordered.

On the following day, less than four days after the injury, all the symptoms and manifestations were more marked; the edema extended upward nearly to the hairline and over the left temple, and the eye was closed from edema of the surrounding tissues. The patient was very nervous, with a temperature of 100.2, and a pulse of 120. Thirty grains (2 gm.) of sodium salicylate was administered intravenously, and the patient was sent to the Fort Wayne Medical Laboratory, where Dr. E. M. Van Buskirk made a roentgenographic examination.

On the following day, in another deep incision at the root of the nose, just beneath the eyebrow, softened bone and an abundance of pus were discovered. At this time, the nose was free from any evidence of sinus involvement, but later in the day the roentgenologist's report was received and indicated that the left frontal sinus contained pus, and the anterior bony wall was involved. The sinus was then opened intranasally, a good sized opening being established, and a considerable quantity of pus evacuated through the nose. At that time, there was a large boggy swelling, involving all the tissues from the inferior bony orbit upward to the hairline, and from the median line of the forehead nearly over to the left ear. Dr. B. W. Rhamy of the Fort Wayne Medical Laboratory reported that the pus in the frontal sinus showed a pure pneumococcus infection. The patient was sent to the Methodist Hospital (previously he had refused to go to the hospital), the wound was irrigated with 5 per cent. alcoholic solution of mercurochrome, and steaming hot compresses were ordered. Dr. Rhamy reported a negative Wassermann reaction, and a white cell count of 12,400.

August 24, after a bad night, when the temperature was 104 and the pulse, 130, the incision at the root of the nose was enlarged, with the removal of several pieces of softened bone and a considerable quantity of pus. Incisions also were made deep into the orbit above, and to the outer side near the external canthus, pus being evacuated from both incisions. The patient and relatives refused a radical operation.

From August 22 to August 30, there was a free discharge of pus from the three wounds that were kept open with drainage, and there was a gradual decrease in the edema and a drop in the temperature to nearly normal. Except during the first few days, the patient had experienced little or no pain. The patient insisted on leaving the hospital, September 1, at which time there was a free opening into the left frontal sinus at the root of the nose, and another small fistulous opening into the sinus through the orbital plate immediately above the eyeball, and with a probe, considerable softened bone could be felt in the surrounding area. During the next six weeks, or until October 27, pus exuded from the three fistulous openings almost constantly, and occasionally a sequestrum of bone would present itself where it could be removed with forceps. The later roentgenograms showed extensive involvement of the frontal bone, including the bony covering of the dura. The pus still showed almost a pure pneumococcus infection.

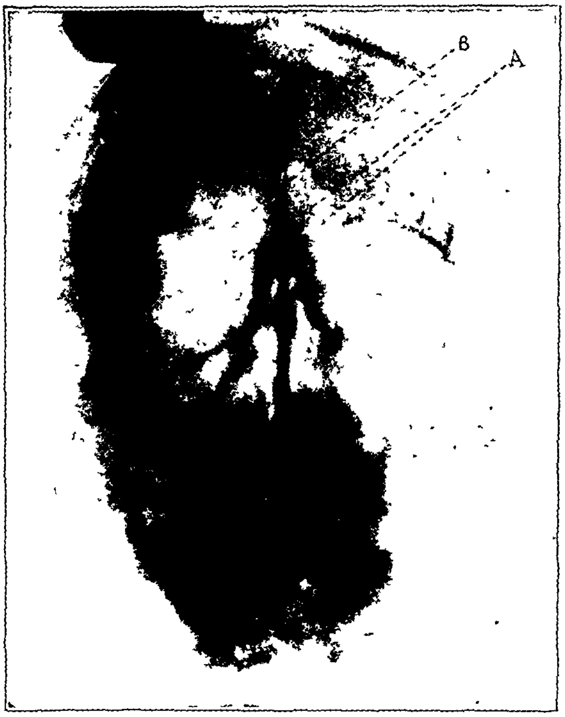

Fig. 1.—Condition, Aug. 18, 1924: *A*, broken down bone with fistula between; *B*, cloudiness of the frontal sinus

Finally, the patient was induced to reenter the Methodist Hospital for a radical operation, which was performed, October 27, nearly two and one-half months after the onset of his trouble. A wide incision was made through the eyebrow from the median line well over on the temple, through which the osteomyelitic bone was removed by curettage, which necessitated considerable exposure of the dura. Fortunately, a good portion of the orbital rim seemed to be unaffected, and, in consequence, the resulting deformity was not great. Much of the bony wall had a worm-eaten or honey-combed appearance, while some of it was merely softened to the extent that it could be wiped out with a gauze sponge. Wherever the osteomyelitic process was found, the curettage was carried down to healthy tissue. The wound was swabbed with 5 per cent. alcoholic solution of mercurochrome, and was left open; rubber tube drainage was provided at the root of the nose. The right frontal sinus was not affected. With the exception of three or four minor curettages and the discharge of several small sequestrums of bone during the succeeding few weeks, the patient went on to a satisfactory recovery. Subsequent roentgenograms disclosed a considerable amount of regeneration, and to the present date he has remained well.

The interesting feature in connection with this case is that the osteomyelitis was of sudden development, and that apparently the inciting cause was trauma, with perhaps injury of the outer bony wall of the frontal sinus at the root of the nose, even though there was no discoverable break in the skin surface. The bone involvement may have come from a latent frontal sinus infection, even though we have no means of proving definitely the route traveled by the infection. However, we know that the infection may travel by two routes, first, direct contiguity of structure, and, second, the vascular route, in both of which instances there is hyperemia of the periosteum, going on to the formation of hemorrhagic foci and the production of subperiosteal abscesses. It is entirely probable, therefore, that there was a latent infection in the frontal sinus, which required only a lowered resisting power and the inciting trauma to start a pyogenic process in the bone structures.

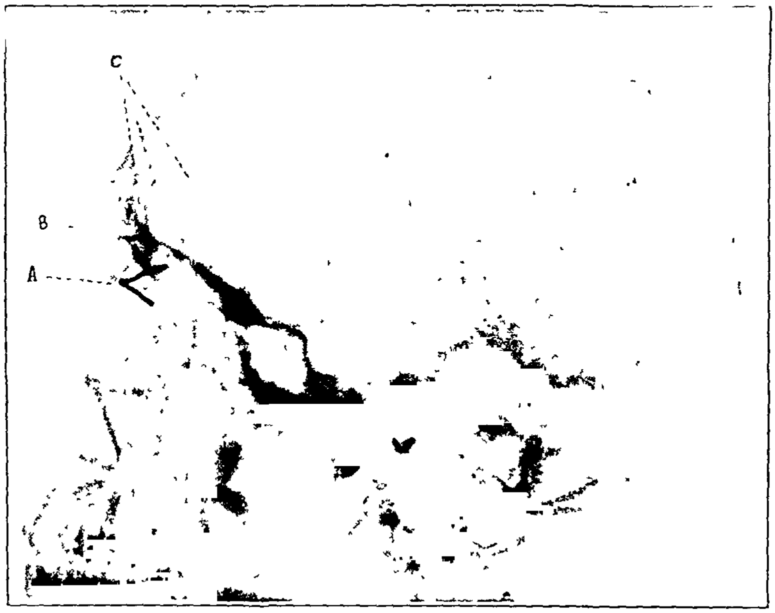

Fig. 2—Condition, September 29, showing bone tissue breaking down: *A*, fistulous opening through the bone through which has been passed a lead style; *B*, fistulous opening through the bone; *C*, areas of bone destruction

That osteomyelitis of the frontal bone is serious is evidenced by the death rate already quoted. The disease, as pointed out by Luc,[2] Knapp,[3] Tilley,[4] Schilling,[5] Gerber,[1] McKenzie[6] and others, is an inflammation invading the frontal bone over a wide area, very difficult to control, with the development of osseous abscesses and destruction of the bony tissues. As McKenzie[6] says: "Once osteomyelitis has set in, the only chance of saving the patient's life lies in the prompt and entire removal of the diseased bone. The sacrifice of large sections of the bony cranium need arouse no apprehension, for if the case recovers the defect will be made good very largely by osseous regeneration." As the history of numerous cases reported will show, marked remissions may occur, which lead to a false sense of security. From six to twelve months should elapse before the patient is released from control.

We seldom deal with an unmixed infection, though an analysis of numerous cases presented indicates that pneumococcic and streptococcic infections give the most violent course, are hardest to control, and are most liable to end in a fatality.

Concerning treatment, I believe that most will be accomplished by the open treatment of the wound after thorough removal of all the diseased bone. Ventilation as well as drainage aids the recovery of these pyogenic processes, and I believe that the penetrating and antiseptic effect of some of the dyes, particularly mercurochrome-220 soluble used locally, aids in limiting the progress as well as destroying the infection. I have little faith in vaccines, even though they are supposed to raise the resisting power by building up the tissue defenses against the inroads of the infective process, though I can see no harm in their judicious use. If of value, they would exert their beneficial effect most after the complete removal of the diseased bone.

McKenzie,[6] who, in 1913, published the most extended article on the subject in the English language, and who frankly admits drawing freely from the writings of Schilling,[5] Gerber,[1] Luc[2] and Knapp,[3] comments on the rarity of the affection and its tendency to occur more frequently and be more progressive in patients between the ages of 15 and 30 years, a fact which the author attributes to the great activity of development of the skull bones during adolescence and early life. He mentions the rapid increase in the thickness of the skull, observable toward the end of childhood at the onset of puberty, and that it is during this period that the formation of spongy tissue in the bone largely takes place.

Schilling[5] noted that the infection seems to follow both acute and chronic frontal sinusitis, and reports two cases in which the retention of pus preceded the onset of osteomyelitis, and still others in which the osteomyelitis seemed to be coincident with the onset of the sinusitis.

It is generally conceded that the ways by which the infection extends are by (*a*) continuity, in which, after the destruction of the mucous membrane covering the walls of the sinus, the bone becomes infected by breaking down the wall and extension to the diploe, and (*b*) indirect infection through the capillaries or veins, which are in direct communication between the mucous membrane and the bony walls and diploe of the cranial bones. The infection may be borne directly by the blood stream, or travel along the outside of the vessels as they pass through the bone. Under any circumstances, the virulence of the infection and the lowered resistance of the tissues may be considered as favoring the involvement of the bone.

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[2] Luc: Ann. d. mal de l'oreille et du larynx **35**: 265, 1909; Brit. M. J. **3**: 990 (Oct. 14) 1899

[3] Knapp, Arnold: Arch Otol. **32**: 181, 1903.

[4] Tilley: Brit. M. J. **2**: 990 (Oct. 14) 1899; **2**: 7 (July) 1917; J. Laryngol., Rhinol. & Otol. **38**: 78 (Feb.) 1923

[5] Schilling: Ztschr. f. Ohrenh. **48**: 52, 1904

[6] McKenzie: J. Laryngol., Rhinol. & Otol. **28**: 6, 79 and 129, 1913.

That the disease may extend to the temporal, parietal and occipital bones is evidenced by several cases reported in the literature, and the time occupied in this process varied from a few days to months or even years. The dura is involved seriously by the suppuration in the majority of cases. At first the dura is highly resistant, but after this resistance is overcome, the suppuration may extend to the brain substance and the large cerebral sinuses.

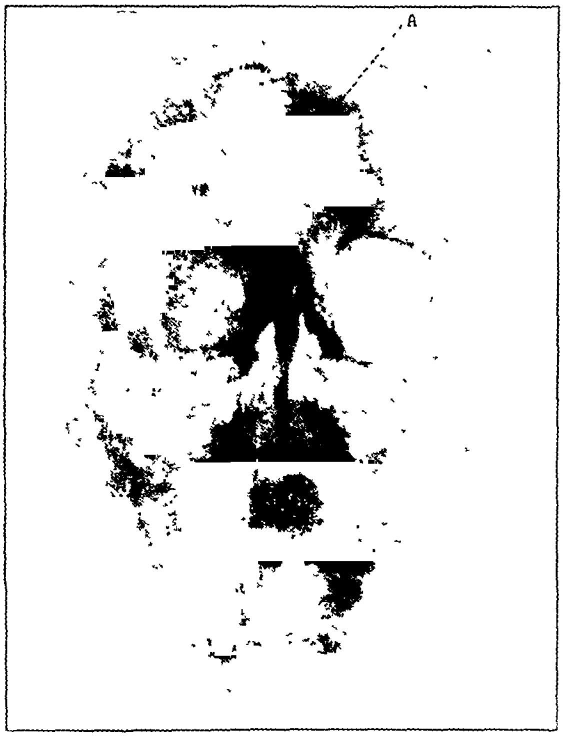

Fig 3—Condition, October 10, just before operation: *A*, extensive breaking down of the walls of the frontal sinus and patches of osteomyelitis of frontal bone.

The initial symptoms are local pain, usually due to the suppuration; edematous and painful swelling, associated with more or less rapid extension of the inflammation; rise of temperature; general malaise, and sometimes chills, nausea and vomiting.

Operation for the removal of the disease focus sometimes leads to complete recovery. More often, however, there will be only temporary relief, with the appearance of a focus either adjacent to the previous one, or in what apparently previously was sound tissue. A second operation may bring cure, but more commonly new foci continually arise, with progressive shortening of the pain-free intervals. Changes in the fundus oculi have been noted in some cases. Death usually closes the scene by disease of the brain and meninges, or by pyemia resulting from infection of the blood stream through the sinuses.

Often it is difficult to tell whether one has to deal with an acute attack or the relighting of an old chronic process, as it is well known that the sinusitis may be latent for long periods and even go unrecognized for years. When osteomyelitis follows operative intervention, even in those cases in which, apparently, every diseased bone cell has been removed, it will be found that the diploetic structure of the bone already was compromised so much as to make it impossible to abort the infection. As Guisez,[7] in describing the progress of the affection, says: "At the onset of the infection, an intense congestion is observable, resulting in dilatation of the blood vessels and augmentation of the soft osseous elements. As in all microbic inflammations, considerable leukocytosis develops. This brings about a hyperemia of the periosteum, going on to the formation of hemorrhagic foci, and at the same time an inflammatory subperiosteal edema becomes evident which rapidly denudes the bone by producing subperiosteal abscesses on both its surfaces. This process is characteristic of osteomyelitis of the cranial bones."

It is the opinion of Luc[2] that cranial osteomyelitis takes place only in those subjects presenting developmental anomaly. Not infrequently, the diploe may be destroyed completely and its place taken by a pus collection lying between two lamellae of compact tissue. Such a condition may exist for a considerable length of time before there is a breaking down of the outer hard bony layer, and it is this sort of a bony infection which may escape eradication by operative procedures, and the process goes on, requiring further eradication, perhaps by repeated operations. It is this tendency on the part of the disease to have a hidden infection which has prompted Luc,[2] Schilling,[5] Gerber,[1] McKenzie[6] and others to caution operators to follow the infection wherever it has gone, and not to stop short of eradication of everything down to diseased bone, no matter how wide the dissection required.

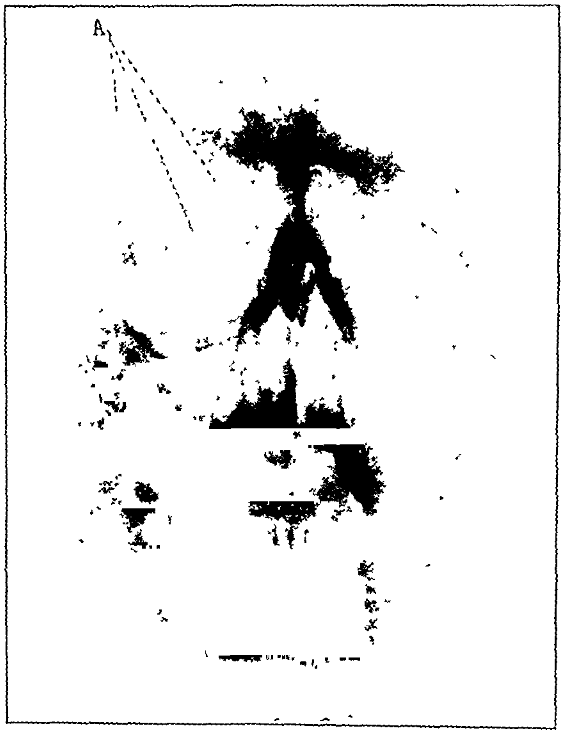

Fig 4—Condition, December 12, after operation: *A*, obliteration of part of walls of sinus, areas of extensive curettage and exposure of dura. Considerable bone regeneration has occurred since operation.

McKenzie[6] is inclined to minimize the part played by the diploe of the bone in relation to the sinus, so emphasized by the continental authors, who contend that the proximity of the diploe to the diseased cavity,

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7. Guisez Ann. d. mal. de l'oreille et du larynx 32.

or its surgical exposure, lays it open to infection. While he believes that the infection may be able to spread more rapidly once the diploe has been reached, he holds that diffuse osteomyelitis is not limited in its spread to diploetic bone only. As the disease spreads, it involves the thin, hard bones of the ethmoid, the lacrimal bone, the nose and the orbit, and does not spare the frontal eminences where the diploetic tissue is attenuated or altogether deficient. The disease may spread in any direction, but the danger zone lies toward the base of the cranium, where so many natural portals pierce the cranial fortifications. Lack of constitutional resistance and extreme virulence of the infecting organism are put forward as reasons why one patient develops osteomyelitis, when another under precisely the same conditions escapes. Once osteomyelitis has set in, the only chance of saving the patient lies in the immediate and entire removal of the diseased bone. The superficial area of the bone resected must exceed the obvious limits of the disease. The resection must be radical, and in doubtful areas it is safer to remove bone than to leave it.

406 West Berry Street.

RECURRENT INOPERABLE CARCINOMA OF THE BREAST

AN ANALYSIS OF THREE HUNDRED AND SIXTY-THREE CASES TREATED BY RADIUM AND ROENTGEN RAY *

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Recurrent, inoperable carcinoma of the breast constitutes the largest group of mammary cancer with which we have to deal. The scar tissue formation consequent on surgical intervention and the multiplicity of lesions make these patients the most difficult type to treat by irradiation. Inoperability, of necessity, makes radiation therapy both the choice and the requisite of treatment.

This paper is a report of the course and an analysis of the treatments of 363 patients with recurrent, inoperable and metastatic carcinomas of the breast who were admitted to the breast clinic of the Memorial Hospital prior to May 1, 1922, allowing an interval of three years or more since they were first observed. Table 1 groups the number of patients who appeared at the clinic.

One of us,[1] in 1922, made a report of the first three of these groups, a total of 218 cases. These patients have been followed, analyzed and included in this study. The preceding report showed that in thirty-one of 124 favorable cases the patients were alive. Our study of the whole group has made it possible to form an opinion of the value of radiation therapy for this phase of mammary cancer and of the results obtained in the treatment of carcinoma of the breast by radical surgery, and has also given insight concerning the natural history of the disease.

The treatment of cancer of the breast by radium and roentgen ray has occupied a prominent place in the literature of radiotherapy. For the most part, authors have considered the subject in its entirety or have evaluated the benefits of preoperative and postoperative irradiation as an adjunct to surgery. But few reports may be found in the literature concerning the results of irradiation in the treatment of the recurrent phases of the disease. Pfahler,[2] in 1920, summed up the value of radium and roentgen-ray therapy for recurrences and metastases from carcinoma of the breast. He believed that radium was the agent of choice in treating recurrent, palpable or metastatic nodules. The roentgen ray was preferred in the general treatment of the carcinomatous area and the pulmonary and mediastinal disease. Hintze,[3] in 1922, reported four cases of recurrent disease, two being inoperable, following radical surgery and prophylactic irradiation with the roentgen ray. Complete regression of the recurrences in these two patients resulted after further roentgen-ray treatments, but the cases were too recent to justify any positive deductions. Hoffmann,[4] in 1921, opposed the use of postoperative prophylactic irradiation and employed roentgen-ray therapy only when metastases had appeared. However, thirteen of the twenty-six continental clinics were still using postoperative irradiation at the time of his report.

Table 1.—*Grouping of Three Hundred and Sixty-Three Cases of Breast Cancer*

	Number
Cases prior to 1918	14
Cases of 1918	50
Cases of 1919	75
Cases of 1920	92
Cases of 1921	92
Cases up to May 1, 1922	40

Kastner,[5] in 1921, found that of sixty-nine cases treated only by surgery, 33 per cent. developed recurrence. In two other groups in which postoperative irradiation was employed, from two-thirds to one erythema dose being used, he obtained the following results: Out of twenty-two cases in which insufficient irradiation was used, 36 per cent. developed recurrence, and in forty-two cases in which intensive irradiation was employed, the percentage of recurrence was 48. He has therefore ceased to employ postoperative irradiation. Furthermore, he has found that recurrences appearing after prophylactic irradiation are very refractory to further irradiation. He points out that through such continued irradiation the tumor cells become accustomed to the rays, or "ray fast." For this reason the clinic of the University of Leipzig omits the postoperative therapy.

On the other hand, Lee and Herendeen [6] have evaluated the results of preoperative and postoperative irradiation as compared with surgery alone. They found, excluding relatively benign cases, in all of which the patients were alive and well, that, of the patients receiving preoperative and postoperative irradiation, 46 per cent. were alive and well three years after radical mastectomy. Of the patients who had received only postoperative irradiation, 33 per cent. were alive and well, while of those treated by surgery alone, 21 per cent. remained free from disease.

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* From the Breast Clinic, Memorial Hospital, New York.

* Read before the meeting on radiology in the Section on Miscellaneous Topics at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Lee, B. J.: Treatment of Recurrent Inoperable Carcinoma of the Breast by Radium and Roentgen Ray, J. A. M. A. **79**: 1574-1576 (Nov. 4) 1922.

2. Pfahler, G. E.: Treatment of Recurrences and Metastases from Carcinoma of the Breast by Means of Radium and Roentgen Rays, Am. J. Roentgenol. **7**: 328-332 (July) 1920.

3. Hintze, A.: Mammacarcinomrezidive nach Röntgenbestrahlung 5 Jahre und mehr klinische geheilt, Klin. Wchnschr. **1**: 2187-2188 (Oct. 28) 1922.

4. Hoffmann, V.: Die Therapie des Mammacarcinoms und ihre Gefolge, Beitr. z. klin. Chir. **121**: 400-412, 1921.

5. Kastner, H.: Zur prophylaktischen [illegible] radikal-operierter Brustdrusenkrebse, Beitr. z. klin. [illegible]

6. Lee, B. J., and Herendeen, R. E.: An [illegible] and Postoperative Radiation in the Treatmen[illegible] Ann. Surg. **82**: 404 (Sept.) 1925.

Additional reports by Quick,[7] Boggs,[8] Pfahler,[9] Béclère [10] and one of us [11] in the field of radium and roentgen-ray therapy of breast cancer furnish dependable evidence of its value.

Pfahler, in 1920, commenting on the nonoperative treatment of cancer of the breast and especially on the recurrences and metastases, called attention to the fact that a certain proportion of recurrences might be prevented if postoperative irradiation was more generally employed. He also felt that little dependence could be placed in statistical studies of end-results of radiotherapy in this field. We believe that a review of the results obtained in a series of recurrent cases treated by irradiation may furnish much valuable information on which reasonable judgment may be passed.

While this study includes a total of 363 cases of recurrent inoperable and metastatic carcinoma of the breast, 158 were so far advanced at the time of the first visit of the patients to the clinic that they were obviously hopeless from the outset. These very advanced cases were treated only with the idea of offering palliation. With the exclusion of this group, there remain 205 cases in which treatment by irradiation as a therapeutic agent could offer a reasonable hope for some regression and control of the disease.

DEFINITION

We have classified all recurrent mammary cases as inoperable when one or more of the following conditions were present:

1. Recurrent, diffuse, subcutaneous nodules in the operative field.
2. Single fixed recurrences to the chest wall.
3. The presence of axillary nodes in the same side, with extension well up beneath the clavicle.
4. Well marked fulness of the supraclavicular fossa of the involved side. Palpable nodes may not be present at this time, but they invariably develop later.
5. Involved nodes present in the opposite axilla.
6. Evidence of involvement of the opposite breast.
7. Intrathoracic metastases.
8. Any recurrence that follows operation on an inflammatory carcinoma of the breast.
9. Metastases to bone.
10. Metastases to distant organs.

We believe that when diffuse nodular recurrences are present in the skin, other metastases may be present, although it may not be possible to demonstrate them. Likewise, fixation of these lesions, or a single fixed mass to the chest wall, places the patient in the inoperable group.

Complete dissection of the supraclavicular area to remove metastatic nodes from cancer of the breast cannot be done without division of the clavicle, which seems a surgical measure not to be recommended because there are probably extensions of the disease beyond the supraclavicular area. The presence of axillary nodes with extension well up behind the clavicle is likewise the precursor of supraclavicular involvement. When nodes in the opposite axilla are involved, it is probable that a widespread dissemination of the disease has already occurred, even though the opposite breast is not invaded. If the opposite breast is involved, we feel that the patient belongs in the inoperable group.

We have called attention to a form of breast cancer, inflammatory carcinoma, which is fulminating in its course. These cases do badly if operation is done, and they recur immediately. The clinical course of this type of mammary cancer is so hopeless from the outset, the surgical results so disappointing, and the recurrences so rapid and diffuse that we feel that these cases surely should be classified as inoperable.

No one can doubt that intrathoracic and intra-abdominal metastases, and the involvement of bones, as well as a spread of the disease to remote areas, indicate inoperability.

AGE

The average age of the patients in this report at the beginning of symptoms was 46 years. The youngest was 23 and the oldest was 70 years. Excluding eleven cases in which the age was not mentioned, they occur as in Table 2.

TABLE 2.—*Age Occurrence of Breast Cancer*

	Number
Up to 30 years	18
31 to 40 years	90
41 to 50 years	137
51 to 60 years	78
61 to 70 years	27
Above 71 years	2

The average age at the time of the first visit to the hospital was 52 years, the youngest patient being 24 and the oldest 80. It will be seen that the age incidence of the groups includes only two beyond the age of 70.

The ages of the thirty-four patients alive have been grouped into decades in Table 3. Eleven of these cases, or 33 per cent., fall into the third and fourth decades, in which the prognosis is always poorest.

TABLE 3.—*Ages of the Thirty-Four Patients Still Living*

	Number
Up to 30 years	1
31 to 40 years	10
41 to 50 years	14
51 to 60 years	4
61 to 70 years	5
Above 71 years	0

LACTATION

There were forty-nine cases that had to be excluded because of a doubtful lactation history. In addition, mammary cancer occurred in the male breast in four patients in this series. Of the remaining 310 cases, 184, or 58 per cent., gave a history of previous lactation, whereas lactation had not occurred in 126 cases, or 41 per cent.

TRAUMA

A history of trauma, as a possible etiologic factor, could be elicited in only seventy-six cases. There was no history of injury in 233 cases, while in fifty-four conclusive data could not be obtained.

SIDE INVOLVED

The left breast was the seat of disease in 197 instances; the right breast, in 163 patients. Three patients gave a history of having both breasts affected.

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[7] Quick, D.: Preoperative and Postoperative X-Ray in Carcinoma of the Breast, Am. J. Roentgenol. **7**: 597-601 (Dec.) 1920.

[8] Boggs, R. H.: Postroentgen Treatment of Carcinoma of the Breast, Am. J. Roentgenol. **5**: *301-304 (June) 1918.*

[9] Pfahler, G. E.: Radium Combined with X-Ray Treatment in Carcinoma of the Breast, Am. J. Roentgenol. **8**: 661-668 (Nov.) 1921.

[10] Béclère, M.: La roentgenthérapie préventive postoperatoire du cancer du sein, J. de radiol. et d'électrol. **8**: 385-400 (Sept.) 1924.

[11] Lee, B. J.: Results and Technique in the Treatment of Carcinoma of the Breast by Radiation, Am. J. Roentgenol. **10**: 62-67 (Jan.) 1923.

TYPES OF OPERATION

There were 302 cases in which the type of operation that had been done could be analyzed, the data on sixty-one being insufficient. Table 4 illustrates the type of operation performed.

The percentage of patients on whom radical surgery was done was 79. We have been impressed with the large numbers of patients coming to the clinic with recurrent and metastatic evidences of disease immediately or shortly after operation, and we have felt that, in many of these cases, careful scrutiny of the patient prior to operation had been omitted, or that an ill advised attempt at surgery had been made. Table 5 shows a marked tendency to an increase in the number of radical mastectomies performed in successive years of the cases under report.

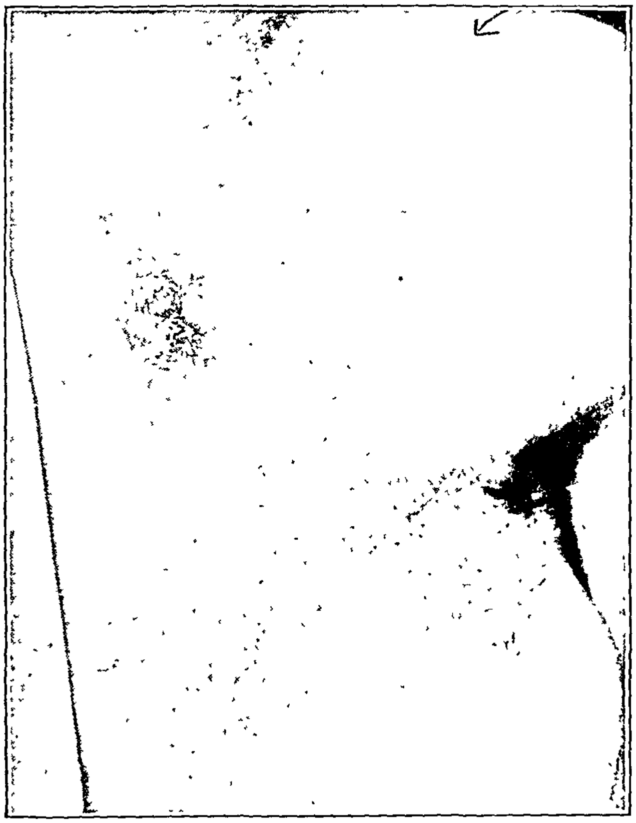

Fig. 1 (A. H.).—Sternal recurrence fourteen years following radical amputation: Arrow points to scar of supraclavicular section which was done at the time of the original operation; this recurrence represents the most frequent chest wall lesion.

Table 4.—*Types of Operations Done in Three Hundred and Two Cases of Breast Cancer*

	Number
Radical mastectomy	239
Local mastectomy	38
Excision of tumor	15
Excision of tumor followed by radical mastectomy	8
Radical mastectomy and supraclavicular dissection	1
Axillary dissection	1

TYPES OF RECURRENCE AND METASTASIS

Seventy-five cases of primary inoperable carcinoma of the breast treated by surgery alone, reported[12] in 1924, showed only eleven that had escaped recurrence after five years or more. Fifty-four of the patients had died from recurrence, and ten, who could not be completely traced, also had definite recurrent phases of the disease. This appears to be a high percentage of recurrences in a group of cases that were selected because of a favorable setting. From our experience in the breast clinic with many recurrent cases, it seems fair to assume that in many of these patients supraclavicular nodes were already involved at the time of operation. In no other way can one explain the large number of cases, 173, that show involvement in the supraclavicular fossa. The axillary nodes on the same side as the breast lesion were palpable in 129 instances, though radical mastectomy had been performed in 238 cases, a recurrent percentage of 54. The inference seems inevitable that the surgery was less thorough than it might have been, and this inference is further strengthened when it is recalled that the chest wall was the next largest recurrent group, 124 cases, or 52 per cent. In not a few instances, metastases to the chest or to more distant parts were already present when the patients were first seen in the clinic.

Table 5.—*Increase in Number of Radical Mastectomies*

	Prior to 1918	1918	1919	1920	1921	To May 1, 1922
Total cases	14	50	75	92	92	40
Number of radical mastectomies	8	22	42	57	79	31
Percentage of radical mastectomies	57	44	56	62	86	78

Table 6.—*Sites of Recurrent Carcinoma*

	Number	Per Cent.
Supraclavicular nodes, same side	172	26
Axillary nodes, same side	129	20
Chest wall	124	19
Intrathoracic—lungs, pleura, mediastinum	65	10
Axillary nodes, opposite side	60	9
Infraclavicular, same side	25	4
Opposite breast	19	3
Supraclavicular nodes, opposite side	19	3
Bones other than spine	19	3
Spine	11	2
Intra-abdominal	5	2
Cervical nodes, same side	5	
Distant metastases	4	
Cervical nodes, opposite side	1	

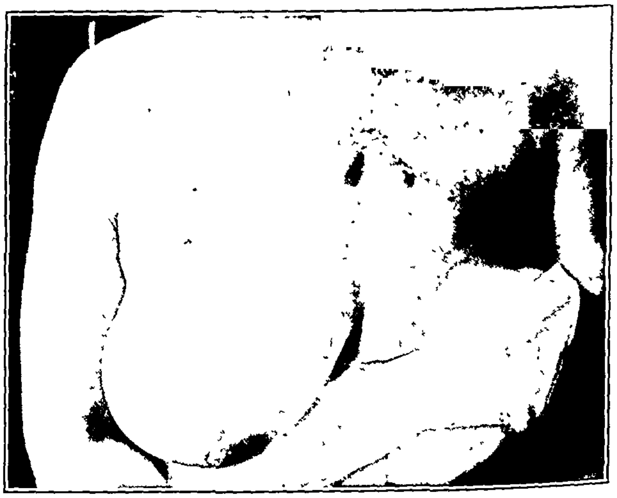

Fig. 2 (A. H.).—Four years after treatment the lesion is not apparent; patient was treated entirely by roentgen ray.

Dr. James Ewing, in commenting on the metastases and recurrences of mammary cancer, has often

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12. Lee, B. J., and Cornell, N. W.: A Report of 87 Primary Operable Cases of Carcinoma of the Breast Admitted to the New York Hospital Prior to April 1, 1919, Ann. Surg. 80: 400 418 (Sept.) 1924.

remarked that "the sparks fly early and wide." Table 6 shows that the site of recurrence bears out this statement.

PATHOLOGY

The pathology of this group was a difficult one to assemble. All of the operations had been done elsewhere. This necessitated considerable correspondence with the surgeons and hospitals. As a routine, in the admitting office at the hospital, a pathologic report or a slide, preferably the latter, is requested at the time of the patient's admission. These requests are repeated through the breast service and not infrequently have received no response. In some instances, the diagnosis of carcinoma was reported but the type was not stated. The pathologic histology of 166 cases is given in Table 7.

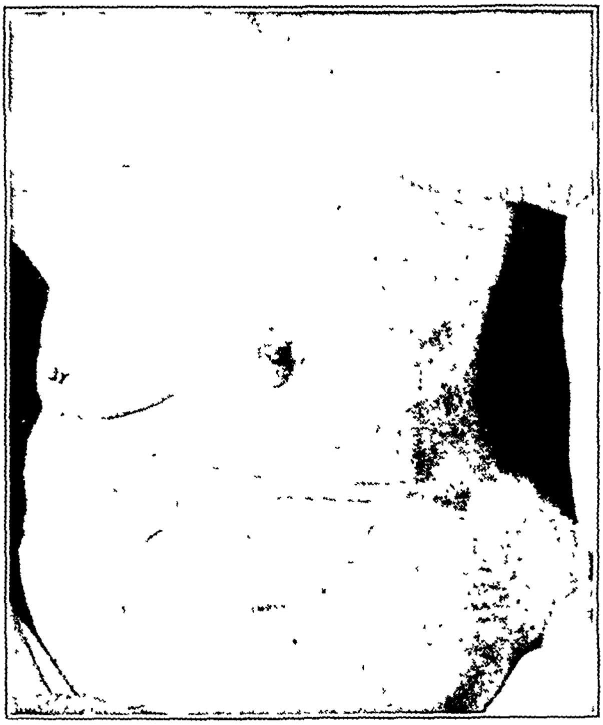

FIG. 3 (S. R.).—Sternal recurrence at lower end of incision for radical mastectomy.

TABLE 7.—*Pathologic Histology of One Hundred and Sixty-Six Cases of Breast Cancer*

		Number
Fibrocarcinoma		43
Cellular carcinoma		29
Carcinoma simplex		23
Adenocarcinoma	17	21
Adenocarcinoma, colloid degeneration	4	
Sweat gland carcinoma		6
Papillary carcinoma		2
Squamous carcinoma (originating from cracked nipple)		1
Fibro-adenoma with early malignant changes		1
Carcinoma, type not stated		40

The group is singularly free from the relatively benign malignant lesions. In only two instances was the lesion a papillary carcinoma. In those patients in whom no pathologic report or slide could be obtained, sections have not infrequently been made at the clinic to establish the pathologic type. When no pathologic condition has been established, the clinical course of the disease has determined, beyond any question, that we were dealing with recurrence and metastases from mammary carcinoma.

TREATMENT

The cases of recurrent inoperable carcinoma, of necessity, belong entirely to the field of radiology, for radiation therapy offers the only hope of arresting or eliminating the disease or relieving many of its distressing symptoms.

Careful selection of patients, with especial attention to the type and extent of the recurrence with suitably planned therapy, will yield the most satisfactory results. No routine procedure can be followed in the treatment of this group of cases; each patient is a special problem to be handled in a special way.

The physical well being of the patient must not be neglected. Efforts to improve nutrition and relieve mental and physical suffering should not be omitted.

In this series of patients irradiation with the roentgen ray has been the agent most frequently employed. It is not a discrimination for this type of therapy in preference to radium or a combination of the physical agents but because the lesions present were best handled by roentgen-ray therapy.

The next greatest number was treated by a combination of radium and the roentgen ray, both forms being used over identical areas of skin quite frequently. We have seen no ill effects from such intensive irradiation and do not subscribe to Pfahler's admonition that the two agents should not be used over the same area of skin. During the last year, in the service of Dr. Quick at the Memorial Hospital, both roentgen ray and radium have been used frequently in this manner in treating cervical node metastases from intra-oral cancer. The time interval between applications was negligible, though the usual full dose of each agent was used. No evidence of cutaneous overirradiation has followed the use of this method.

Radium alone as an agent for treating inoperable recurrences has had the least use, but some of our most striking results have been obtained in this way. Fewer cases have lent themselves to exclusive radium therapy because most of the cases presented too widely disseminated lesions.

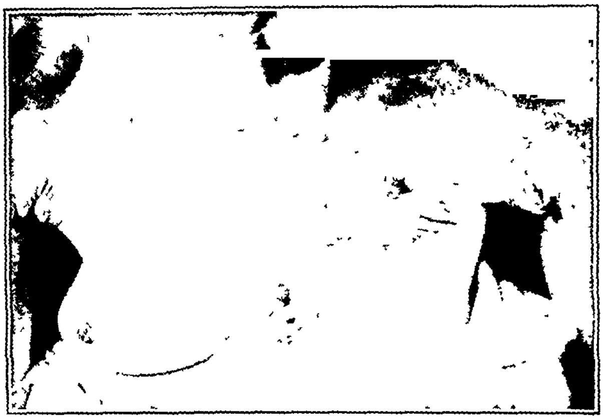

FIG. 4 (S. R.).—The lesion has practically disappeared following the treatment with radium consisting of two radium trays.

A considerable number of patients, 158 in all, were so far advanced in the course of the disease that little or no result could be expected from treatment. Such patients should be separated from those in whom considerable palliation or regression might be anticipated. Even the more advanced ones may be treated, but much less aggressively, giving some palliative relief. Though none of this class are alive, a number were made much more comfortable. We feel that these cases should be treated in an effort to relieve suffering, and occasionally marked palliative results are obtained. One should bear in mind that the treatment for these advanced cases should not be vigorous, for intensive irradiation may do more harm than good.

Excluding the very advanced patients, there were 205 cases in the recurrent inoperable class in which a reasonable hope could be entertained for some regression and considerable control of the disease by appropriate radiotherapeutic measures.

Roentgen-Ray Treatment.—In the majority of cases irradiation by low voltage has been employed under the direction of Dr. Herendeen, the roentgenologist of the hospital. The low voltage treatment used in this series consisted of cycles of from one to five exposures, depending on the number of areas to be treated. The time of treatment varied from seven to twenty-five minutes. The set-up used was with a peak voltage of from 135,000 to 140,000 volts, 4 milliamperes of current, a focal skin distance of from 10 to 12 inches, and 4 mm. of aluminum filtration. The dosage in each instance was planned to meet the need of the individual case. Treatments were repeated over identical areas if regression had been insufficient or if the disease had remained stationary, but not because the condition of the skin would permit further irradiation. This form of roentgen-ray therapy was employed for supraclavicular or axillary involvement, for diffuse cutaneous recurrences of so-called inflammatory carcinoma and intrathoracic or osseous metastases. Striking disappearances of cutaneous nodules have occurred following the use of the roentgen ray. Some of these cases have shown a reappearance of the disease in the irradiated field, and these lesions are particularly resistant to treatment, the cells becoming "ray fast," as Hintze terms it.

High Voltage.—In the earlier cases in this series, no treatment by high voltage was given. This type of roentgen-ray machine was not installed at the Memorial Hospital until about three years ago. Since 1922, certain well chosen cases of intrathoracic metastases, as well as some bony metastases in the spine and pelvis, have yielded reasonably satisfactory and suggestive results. We feel that when a complete cycle over the chest wall has been employed by low voltage, a considerable depth dose has been delivered to the chest which has definitely influenced the disease in this region. From our present point of view, high voltage therapy has a limited field in the treatment of recurrent and metastatic mammary cancer.

Treatment by Radium.—The radium pack or radium tray is used for large, well circumscribed recurrences, while bare tubes of emanation are employed in the smaller, superficial recurrent nodules or in axillary nodes; but the latter form of recurrence has been difficult to treat satisfactorily.

The treatment of inoperable recurrences of the breast by radium has been carried out in one of the four following ways or by a combination of any two or all of them:

1. Treatment by the radium pack has been given at a distance of 6 cm. from the skin over an area of approximately 70 sq. cm., a maximum dose of 10,000 millicurie hours being employed. The filtration has been 1 mm. of brass and 0.5 mm. of silver. The use of this form of external radium therapy has been confined to the treatment of involved supraclavicular or axillary nodes, the infraclavicular fossa, the larger recurrences on the chest wall or metastases to bone.

2. The tray is a smaller external applicator with the same filtration and is used at a distance of 3 cm. from the skin, the maximum dose being 3,000 millicurie hours. The moderate sized, single, fixed recurrences of the chest wall were treated with the tray, and infrequently the lymph drainage areas. The promptest and most satisfactory regressions have been obtained by the use of the tray in treating these single fixed lesions.

3. Bare tubes of radium emanation were employed in treating small recurrent lesions, approximately 1 millicurie being given per cubic centimeter of tissue treated. Great care must be exercised in placing the tubes. If they are less than 1 cm. from the skin surface, ulceration may occur, while necrosis of bone or cartilage may result from a too close proximity to these structures. Localized subcutaneous nodules of the chest wall may be cared for in this manner, but they may be treated just as effectively, in many instances with roentgen-ray irradiation. The satisfactory implantation of bare tubes in axillary nodes cannot be done with accuracy unless surgical exposure is employed. In the majority of cases one does not feel justified in doing this unless the disease is confined solely to the axilla. Supraclavicular nodes treated after this fashion frequently cause an intractable brachial neuritis. The treatment of inoperable recurrences by insertion of bare tubes has a very limited field.

4. Breast needles with 0.4 mm. of platinum filtration have been of service in the treatment of recurrent axillary nodes, or where there has been an extension of the disease to the opposite breast. Approximately 7 millicurie hours per cubic centimeter of tissue treated is the dose with such needles. We have been more and more impressed with the efficacy of this form of irradiation.

Electrocoagulation.—A few well chosen cases with small isolated recurrences not fixed to the chest wall have been successively handled by this method. Table 8 gives a summary of the results to date of treatment employed in the 363 cases under report.

Table 8.—*Summary of Results of Treatment*

Type	No.	Regression: Marked	Regression: Moderate	Regression: None	Alive: No Evidence	Alive: Evidence	Dead and Final
Favorable. Roentgen ray	94	40	41	13	10	6	78
Radium	13	6	5	2	1	1	11
Combined	98	50	37	11	7	9	82
Total	205	96	83	26	18	16	171
Advanced. Roentgen ray	104	5	17	82	0	0	104
Radium	10	1	5	4	0	0	10
Combined	44	15	15	14	0	0	44
Total	158	21	37	100	0	0	158
Grand total	363	117	120	126	18	16	329

DURATION OF THE DISEASE

A study of the cases under report has furnished certain information regarding the duration of symptoms and the behavior of the disease. The average duration from the time of the first symptom to operation was nine months. The case that gave a history of the shortest duration was two weeks, and the longest, six years and eleven months. The average duration from operation to recurrence was almost one year and seven months. Many cases gave a history of immediate recurrence, and for this reason we feel that the radical operation was not the procedure of choice for those particular cases. The greatest interval from operation to a reappearance of the disease was thirty-two years, the type of metastasis in this patient being involvement of the ischium and ilium.

Mrs. N. J., aged 80, had had the left breast removed thirty-five years before, and one year afterward, the right breast. She remained perfectly well until eighteen months prior to admission to the breast clinic. Physical examination revealed no abnormality other than a few superficial skin recurrences over the right chest wall. Both breasts had been removed by radical mastectomies. There was *no involvement of the* lymph nodes. The left ilium was quite tender on pressure, and passive movements caused pain. The roentgenogram of the left hip revealed evidence of extensive bone destruction in the ilium and ischium. One small skin nodule was excised which proved to be carcinoma, but the type was not stated. The patient received one cycle of low voltage roentgen-ray treatments over the left hip. While the last note of her follow-up record reports that she is bedridden, this patient was made comfortable for a considerable number of years.

Table 9—*Synopsis of Group*

Year	Total No	Alive: No Evidence	Alive: Evidence	Total: Alive	Total: Final	Total: Dead
Prior to 1918	14	3	1	4	.	10
1918	50	0	1	1		49
1919	75	2	1	3	2	70
1920	92	4	1	5	2	85
1921	92	3	8	11	.	81
To May 1, 1922	40	6	4	10	.	30
Total	363	18	15	34	4	325

Alive of entire group (363), 9 per cent.
Alive of favorable group (205) 17 per cent

The average duration of life after recurrence was two years and one month, the shortest being one month and the longest ten years and four months.

The average duration of life for the entire group from first symptom to death, or, if living, to May 1, 1922, was four years and five months. One patient lived only five months from the date of the first symptom, while the longest duration of disease of any patient was thirty-eight years and five months.

RESULTS

The treatment of the favorable group of 205 cases gave the following results:

Thirty-four patients are alive, which is 9 per cent. of the total number, or 17 per cent. of the favorable group. The total number alive without evidence of any lesion is eighteen, while sixteen have disease still present. The average duration of life of this group since recurrence is slightly over five years. A detailed analysis of the thirty-four cases is shown in Table 9.

Though the percentage of patients showing satisfactory control of the disease to date in this report is a small one, many other patients showed marked but less striking evidence of the benefit of radiation treatment. Certainly many patients were salvaged for a time who otherwise would have succumbed earlier to the disease. The survey of this group has convinced us that the treatment of recurrent inoperable mammary cancer by irradiation gives a definite prolongation of life and an amelioration of many symptoms.

Table 10.—*Summary of Thirty-Four Favorable Cases*

Year	Case	Age	Pathologic Condition	Type of Operation: Radical	Local	Excision	Excision Followed by Radical	Doubtful	Treatment: Roentgen Ray	Radium	Combination	Result: No Evidence	Evidence	Duration: Before Operation	Operation to Recurrence	After Recurrence
To 1918	1	40		1					1				1	17	6	124
1918	6	48	Cellular carcinoma	1					1			1		1	7	94
1918	10	47	Adenocarcinoma	1					1			1		32	3	112
1918	13	56			1				1			1		5	3	92
Total (4)				3	1				4			3	1			
1918	39	68		1						1			1	1	24	90
Total (1)				1						1			1			
1919	61	50		1					1			1		22	1	68
1919	69	29						1	1			1		½	2	74
1919	85	43		1							1		1	6	3	78
Total (3)				2				1	2		1	2	1			
1920	91	37	Adenocarcinoma	1							1	1		72	½	54
1920	99	67	Type not stated	1							1	1		1	2	55
1920	108	50		1					1			1		4	13	61
1920	120	38						1			1		1	5	4	72
1920	219	34				1					1	1		2	360	60
Total (5)				3		1		1	1		4	4	1			
1921	232	45	Adenocarcinoma	1							1	1		24	14	114
1921	233	41	Carcinoma simplex	1							1		1	5	16	28
1921	234	45		1							1		1	1	1	44
1921	235	45	Carcinoma, type not stated	1					1				1	12	384	65
1921	236	65		1					1				1	4	34	48
1921	237	58		1							1		1	8	5	52
1921	238	40	Carcinoma, type not stated	1							1		1	1	12	54
1921	239	41		1						1			1	1	23	42
1921	240	31		1							1	1		10	3	45
1921	241	63	Carcinoma simplex	1							1	1		2	5	49
1921	242	35	Type not stated	1							1		1	3	4	42
Total (11)				11					2	1	8	3	8			
1922	323	42	Cellular carcinoma	1					1				1	40	15	42
1922	324	61	Cellular carcinoma	1							1	1		36	12	52
1922	325	47					1		1			1		3	2	40
1922	326	59		1					1			1		1	7	37
1922	327	44			1				1			1		3	1	40
1922	328	39		1					1				1	10	2	40
1922	329	33		1					1			1		3	18	29
1922	330	45	Scirrhus carcinoma	1					1				1	1	3	49
1922	331	51		1							1	1		8	1	53
1922	332	35		1							1		1	2	3	36
Total (10)				8	1		1		7		3	6	4	345	993	203
Grand total and average 34 cases				27	3	1	1	2	16	2	16	18	16	10	29	60

CONCLUSIONS

1. A careful selection of patients for operation should be made as a prophylaxis against the recurrence of breast carcinoma.
2. Preoperative and postoperative cycles of roentgen ray are important prophylactic measures against recurrence.
3. Carefully planned and properly applied irradiation to recurrent breast carcinoma definitely prolongs the life of the patient and may control the disease for a considerable period of years.

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ABSTRACT OF DISCUSSION

Dr. Henry K. Pancoast, Philadelphia: I wish that we could have the statistics from a large number of surgeons and roentgenologists in order that we might tell definitely the advantages of postoperative treatment, and possibly of anteoperative treatment also. The only difficulty will be that in case of surgical procedures, the diagnosis will have been confirmed by biopsy, and when radiotherapy alone is used, we shall have no biopsy in most instances. We can recognize at least three groups of cases requiring postoperative treatment; the apparently favorable cases; the recurrent cases, as are most of Dr. Lee's, and those in which the treatment is obviously palliative only. The question is often asked as to when postoperative treatment should be started. I am rather inclined to wait two, three or even four weeks, until the patient has fully recovered from the operation and is better able to stand the strain imposed by irradiation If it is thought imperative to treat the patient immediately because of the fear of a very rapid recurrence, it will be a waste of time to try to irradiate such a patient anyway. It seems to be customary now to treat practically all cases of recurrent carcinoma of the breast. If a surgeon is willing to have a patient treated for recurrence, why not have the patient treated soon after operation and try to prevent that recurrence or at least keep that recurrence off as long as possible? It is, of course, essential to examine every patient for metastases. We examine them superficially for enlarged glands or for nodes in the skin. The chest should be included, and if the patient complains of any obscure pains elsewhere in the body, certainly the bones in those localities should be examined. I myself feel more hopeful of results in bone mestastases than in chest metastases. Of course, chest metastases are taken care of in the general routine of irradiation of the breast area. Bone metastases, if they are not too extensive and scattered, should always be treated because so much can be accomplished. We may not necessarily cure these patients of their bone metastases, but certainly we can help them, and in a large percentage of cases the pain will be relieved, at least temporarily, and sometimes permanently. Resistant multiple skin nodules sometimes respond differently with different types of filters. Resistant single nodules may be removed surgically or by electrodesiccation. Certainly the indication arises at times for such removal.

Dr. George E. Pfahler, Philadelphia: There can be no questions as to the superior value of irradiation in the treatment of recurrences or metastases following carcinoma of the breast. When we are dealing with metastatic carcinoma of the bone, we are always dealing with a part of a general carcinomatosis; and while we can get brilliant results in the particular area treated, the disease that has already been planted elsewhere in the body is likely to progress, and we shall get our most brilliant results, therefore, in those cases in which there are one or two or a few isolated foci of this disease. If we can secure such brilliant results with recurrent carcinoma, is it not rational that we should be able to prevent the growth of that carcinoma if the disease was treated at an earlier stage? I urge that the patient be sent for irradiation just as soon after the operation as her condition and circumstances will permit, generally from about ten days to two weeks after the operation. I am opposed to the massive dose treatment. If the patient is not quite up to normal after the operation, if we do not give doses in massive quantity, we can repeat them more frequently, perhaps every day, or every other day, and give a smaller quantity, and the patient will not suffer as a result. As to choice of treatment, we must choose either high voltage rays, low voltage rays, or radium, depending on the location and character of the recurrence or metastasis. If the metastasis or recurrence is deeply located, I think unquestionably we shall obtain the best results by means of the high voltage rays. If it is superficial and on the chest wall, we shall probably obtain best results by low voltage rays. If it is localized, heavy doses of low voltage rays or local application of radium would probably accomplish the very best results.

Dr. Henry Schmitz, Chicago: I have seen quite a number of recurrent cases. In one case of recurrent carcinoma of the right breast, with extension into the left breast, both supraclavicular regions and the pelvis, and with bony metastases, particularly in the lumbar spine and metastasis or continuation in the lung substance, we carried out the following treatment: After careful examination of the blood and several days' observation of the general condition, we gave a blood transfusion to increase resistance and reactivate the defensive powers. Then we applied a one-third roentgen-ray dose to eight fields anteriorly and eight fields posteriorly, covering the neck and entire trunk, using short wave roentgen rays. The entire course was given within one week. The second course was applied two weeks later and the third course after an interval of another two weeks. We also performed a McDill lymphangioplasty, which worked successfully, and within four weeks the peritoneal cavity appeared to be free from fluid. Slight hemorrhages occurred from the uterus. These were controlled with an intra-uterine application of 3,600 mg. el. hrs. of radium. The patient regained strength slowly, and within three months she was up and about and after another month she left the hospital. She has been doing light housework since. At a recent examination we found movability of all cancerous nodules and growths. The latter have remained stationary and entirely inactive. We have had several such cases and seen equally gratifying results. These observations are of interest, as they may throw light on the hypothetic "X" of Barclay present in systemic cancer disease.

Dr. Burton J. Lee, New York: I agree with Dr. Pancoast that postoperative irradiation had best be withheld for three or four weeks after operation, until the wounds are well healed and the patient has recovered from the operative procedure and is in very much better shape to stand irradiation than earlier. I feel that the study of the whole group is not discouraging. My final reaction to the whole study is really this: If carcinoma of the breast in a recurrent phase can yield such interesting results, is it not possible that postoperative irradiation should be more generally employed? I believe it should be. I also believe that preoperative irradiation should be resorted to oftener.

Epidemic Disease in West Africa.—Transport facilities have changed so profoundly since the war that we can no longer look on the desert sands of the Sahara as a barrier against disease from the north. The tide has turned at last, and the little waves of disease which rippled up a short distance from the coast are now likely to be overwhelmed by a tidal wave from the north. When the current set north and north only, tuberculosis, which is already a curse of coast towns, spread slowly and insidiously up-country. But even now it has not affected the northern provinces to anything like the extent it has riddled the southern coast districts. Cancer and grave gastric troubles, doubtless the inevitable concomitants of modern civilization, have not, so far, been traced beyond the ambit of European influence on clothes and diet, implanted on the coast towns centuries ago. Similarly, the pains of normal labor in the coast negress, so far from being slight and rapidly effective as is the case with her untutored sister in the Hinterland, are apparently becoming, year by year, European in character. Sharp, N. A. D.: *Tr. Roy. Soc. Trop. Med. & Hyg.* **19**:260 (Oct.) 1925.

TRAUMA AND MALIGNANCY

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A general impression has probably existed in the minds of the profession ever since medical arts have been practiced that neoplasms could result from trauma. Virchow subscribed to this and rather clarified conceptions concerning tumor development by proposing as a doctrine [illegible] any change which is associated with [illegible] may terminate in the development of a true tumor. In some instances involving undetermined factors and conditions, this change occurs more readily than in others. The more active tissues are proliferating, and the longer proliferation continues to occur the more readily neoplasms develop. The transformation from hyperplasia to neoplasm, more especially malignant neoplasm, is of course a relatively rare occurrence, while simple hyperplasia from many causes is exceedingly common.

We know that whereas traumas of various sorts are of almost daily occurrence in every human life, malignancy is rare, and that trauma can never be the only and ultimate cause of malignancy. Science has begun to give us a glimpse of the undetermined factors that activate the transformation of normal tissue cells to malignant cells, as in the Rous sarcoma of mice. Tar cancers are being produced in experimental animals with fairly convincing accuracy and precision. That there is a relation between trauma and inflammation and between inflammation and tumor formation seems apparent. Then there are the cases of malignancy following trauma to areas already pathologic, as instanced by nevi and warts. We are certain that there are predisposing factors always present before trauma can excite malignancy, and this is as far as science takes us. From here on, we must rely on clinical data and reasonable inferences to be drawn from it.

To the passing generation of surgeons, the question as to the rôle of trauma in malignancy was little more than an interesting speculation. To the surgeon of today, it has become a matter of practical everyday importance to be able to make some reasonable conclusion in regard to the value of the factor of trauma in the causation of neoplasms and other disease entities concerning which the etiology is doubtful or still under dispute. The development of social legislation has been responsible for this. Organized medicine has participated very little in the gradual evolution of the social conscience, which during the last fifty or sixty years has been responsible for the development of a type of legislation intended to compensate the industrial worker for loss of time and function of members resulting from injuries sustained while at work. This sort of legislation has gone hand in hand with the so-called industrial revolution, or growth of large industry and wholesale machine production, which has so rapidly supplanted the small home industry of the last century.

The surgeon of the future will have an increasing responsibility in cases in which the rôle of trauma in the etiology of disability is under dispute.

It is interesting to note that while the tendency of compensation boards is to find trauma responsible in cases of malignancy, when the patient's history of the actual trauma is unconvincing, often dating back several years, when the injury is recorded in the vaguest of terms, or when there is a notable possibility of malignancy existing prior to the alleged injury, the gradual trend of opinion of scientifically trained observers is to restrict more and more the percentage of incidence of true traumatic malignancies and to become more and more conservative in the attitude toward this question.

In following this gradual change in point of view, we shall limit our attention to sarcoma following a single trauma. Thorough discussions of this particular phase of the question began with an elaborate paper by Loewenthal[1] from Bolinger's laboratory in Munich in 1875, which includes the presentation of short case histories of 800 cases, with about 100 cases of tumor formation following trauma. In so many of them, any critical examination contradicts his conclusion that the trauma described had any causal relation to the neoplasm that his percentage conclusions are of little value. He reports, however, a considerable number that are very interesting and suggestive, as, for instance, several cases in which sarcoma developed at the site of old fractures and in old gunshot wounds.

Samuel Gross,[2] in 1897, after a considerable investigation, made the statement that, among 144 cases of sarcoma of the long bones that he had been studying, one half of those in which the etiology was recorded was due to trauma.

Coley[2] followed, in 1898, with an article on the influence of injury on the development of sarcoma. He studied seventy cases of sarcoma in which there was a history of trauma in forty-six, but more careful analysis of the records of his cases shows that not more than half of them are even fairly convincing.

The turning point was reached in evaluating the factor of trauma when von Buenger[3] proposed the standardization of the statistics regarding trauma and obtained reports from many large German clinics for five year periods, which included an accurate statement of the number of cases in which the tumor could be attributed with certainty, or with a probability bordering on certainty, to a single severe trauma, the character of the trauma being accurately stated.

The effect of this attempt at establishing a scientifically critical attitude at once became apparent. All the percentages so obtained, as well as all the reports since that time, give a tremendously lower incidence of traumatic tumor than the older ones. Machol[4] found that he could accept the reasonable certainty of a traumatic etiology in 2.06 per cent. of cases. Wolff[5] gave his percentage as 14.35; Liebe,[6] as 10.8 per cent.; Wuerz,[7] as 5 per cent.; Seidener,[8] as 14.19 per cent. It is readily seen that though we should expect the statistics to be considerably affected by the differences in individual judgment, all are tremendously lower than the 44.7 per cent. of Lowenthal. Jordan,[9] in 1901, proposed four postulates to be fulfilled before clinical observation on the subject could be given any credence.

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[1] Lowenthal: Ueber die traumatische Entstehung von Geschwuelsten, Arch. f. klin. Chir. **41**, 1898.

[2] Cited by Ophüls, William: California State J. Med. **19**: 54 (Feb.) *1921*.

[3] Von Buenger, cited by Wilhelm Fraef in "Trauma und Tumor," Centralbl. f. d. Grenzgeb. d. Med. u. Chir. **17**: 603, 1913.

[4] Machol: Die Entstehung von Greschwuelsten im Anschluss an Verletzungen, Inaug. diss., Strassbourg, 1900.

[5] Wolff: Zur Entstehung von Geschwuelsten nach traumatischen Einwirkungen, Inaug. diss., Berlin, 1874.

[6] Liebe: Beitraege zur Lehre von der traumatischen Entstehung der Sarkome und Enchondrome, Inaug. diss., Strasbourg, 1881.

[7] Wuerz, K.: Ueber die Entstehung von Geschwuelste, Beitr. z. klin. Chir. **26**: 567, 1900.

[8] Seidener, M.: Ein Beitrag zur Frage von der Geschwuelste, Ann. d. staedtischen allg. Krankenhaeuser **15**: 589, 1909.

Lowenstein,[10] working in Czerny's clinic, has improved on these earlier postulates by proposing for the use of the German compensation boards the following proof of traumatic etiology:

1. Credible proof that trauma was sustained must be brought by the claimant or shown on investigation by the judges.
2. The accident must have been of a nature that makes probable the injury of the part later affected by neoplasm, though it need not have acted directly on it.
3. The accident, the intermediate or premonitory symptoms of malignancy, and the malignancy itself must bear a clear relationship to one another.
4 The tumor which is attributed to trauma must have developed subsequent to the injury, and at a time which makes probable a causal relationship, due consideration being given to the pathology and clinical type.

The whole subject was discussed at the second international conference on cancer at Paris in 1910 by Berard and Thiem.[11] Thiem defines the trauma as one severe enough to cause immediately appreciable effects, from both an anatomic and a functional standpoint, giving rise to credible symptoms which may later subside. He emphasizes the importance of the premonitory or intermediate symptoms, which he calls the "bridging symptoms." The possibility of a causal relationship between an injury and a tumor development after the passage of two or three years is very slight, unless such symptoms have existed. He makes an exception of glioma of the brain, which is known to be of exceedingly slow growth. He accepts two years as a reasonable time limit for sarcoma, and three years for carcinoma. As a minimum time limit, he will accept eight days in sarcoma and not less than three or four weeks in carcinoma.

It is not our purpose in this paper to add any new scientific data on the cause of malignancy or on the exact rôle of trauma, if any, in malignancy. Nor do we care to pile up further evidence to prove that oft repeated or continuous trauma to certain parts of the body may beget cancer, for the mass of clinical and experimental data to date would seem definitely to prove this fact.

We believe, however, that with each succeeding year of the enforcement of the social legislation known as employees' accident compensation, the question of malignancy following trauma is being raised more and more frequently; that the surgeons and pathologists are the only members of society equipped to be fair and just arbitrators when this question is raised; that every trauma occurring in a working man or woman may eventually raise this or similar questions for arbitration or litigation, and that therefore it behooves the surgeon to study every trauma carefully, by using the laboratory, roentgen rays and complete physical examinations as means of securing complete diagnosis whenever indicated, and finally by reviewing case reports and other clinical data that we can set forth certain postulates that will assist in determining the causal relationship, if any, between a given malignancy and an alleged trauma.

For the last five years we have watched for and collected the histories of every case in which malignancy was alleged to follow trauma. These histories have been secured from our own cases, from those of fellow surgeons and from several large insurance companies. Many in which the attending surgeon thought there could be a relationship were easily ruled out on close analysis, and no claim for compensation has ever been made. Of a total number of 300 cases studied, only fifteen required a more critical analysis before classifying them as compensable or noncompensable post-traumatic malignancies. None could be classed as positive post-traumatic malignancy from a purely scientific standpoint.

It is interesting to note how frequently a surgeon would say: "I have a case of sarcoma following an *injury*," and yet on securing the hospital record one would find only a bald statement, such as, "Patient claims he injured leg five years ago." Or there would be a good history of the trauma and a good description of the tumor a variable period thereafter, but no record of roentgen-ray or other examination to prove the absence of tumor at the time of injury. Even in some of the histories of sarcoma developing at the site of old fractures, one is led to speculate on the possibility of the fracture being of a pathologic nature, the sarcoma not being diagnosed until the fracture had occurred.

These cases were studied from two standpoints: (1) a purely medical, and (2) a medicolegal.

In order to say positively that a malignant tumor had developed as a direct result of a single trauma, we formulated postulates from the purely medical standpoint as follows:

1. Definite description by the reporting surgeon of the trauma at the time it was sustained.
2. Definite proof by every possible means of examination made at the time the injury was sustained that no tumor already existed at the site of trauma.
3. Definite signs and symptoms of a pathologic process continuing at the site of the trauma until a malignant tumor appeared and was positively diagnosed.

Thus far we have been unable to find a single case that fits these postulates. In a few other cases, however, the suggested relationship was too strong to be cast aside.

For application to cases that have a definitely legal aspect and appear before courts and compensation boards for adjustment, arbitration or litigation, we propose the following postulates, which are the first to be submitted for the consideration of surgeons and compensation boards in the United States:

1. Reasonable proof of a trauma of sufficient seriousness to cause definite tissue changes:

(*a*) The injury to be reported within a reasonable period after the accident.

(*b*) The examination and condition of the traumatized tissues to be reported by a physician within a reasonable period after the injury.

2. The developing neoplasm must be at the same site as the original injury and must involve some of the tissue which, without reasonable doubt, could have been involved in the original trauma.

3. Definite evidence must be produced to prove that no neoplasm existed at the site of injury prior to the accident.

4. In addition to the history of trauma there must be a history of definite bridging signs, such as a persistent swelling, an unhealed wound, or anatomic and func-

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[9] Jordan: Ueber die Entstehung von Tumoren, Tuberkulose und andere [illegible] nach Einwirkung stumpfer Gewalt, Münch [illegible] 1741, 1903.

[10] [illegible] rage der "posttraumatischen Krebse," Beitr. z. klin [illegible]

[11] Thiem: Handbuch der Unfallerkrankungen, Stuttgart, 1909.

tional disturbances which connect the trauma with the malignant growth; subjective symptoms, such as complaint of pain, tenderness or weakness, are impossible to evaluate or visualize and therefore must not be considered competent evidence.

5. The time that has elapsed between a given trauma and the development of the malignant tumor need not be considered if the foregoing conditions have been present; however, it is safe to say that a malignant tumor that develops within two weeks after the trauma existed prior to the injury.

6. A preexistent malignant tumor may be aggravated or accelerated in its growth by a trauma; the trauma may be the first factor to call the patient's attention to the tumor. Treatment should be instituted at once to eradicate the tumor or at least to prolong the patient's life. Under our present laws, which provide for compensation in case of aggravation of an existing condition, by trauma, the employer or his insurance company would be held responsible for this treatment, provided aggravation could be shown, and would be forced to pay for the permanent disability that might follow. He should not be held responsible for the subsequent death of the patient due to malignancy which will occur in the majority of these cases, for the trauma could not aggravate to the point of fatality a preexistent condition which already positively doomed the patient. Nor should he be held responsible for hastening the death, for this point could only be one of speculation on the part of the medical profession.

7. In the case of metastatic or secondary tumor developing at the site of trauma, the first four postulates must be met before the employer is held responsible, and such responsibility should be limited to the treatment of the local condition; it should not be extended to include responsibility for the death that is bound to occur shortly, as the trauma could not have aggravated the primary growth.

In further explanation of these postulates, we offer some of the data gleaned from a study of a great number of alleged cases of malignancy following trauma. In a high percentage, the workman took no note of the injury until after the neoplasm developed. Then he recalled an accident which had seemed so slight that he paid no attention to it at the time. He could give no other bridging symptoms except a feeling of pain at this site since the injury. We were able to secure the compensation board rulings in a number of such cases, and in the majority of instances the case was dismissed because of lack of conclusive evidence. In a few cases in which awards were made, it was evident that the board acted more on sentiment than on judgment.

A few cases had very definite bridging signs from the instance of trauma until the neoplasm was diagnosed, but in only one of these did we have any credible proof that a neoplasm was not preexistent. Bloodgood[12] says: "In my own group of now 1,000 bone tumors, of which perhaps 400 are sarcoma, I have but two cases in which directly after the injury an x-ray was taken showing a negative bone." It seems impossible for us to state positively that a tumor developed following a trauma unless we can rule out its presence prior to that trauma, especially when we consider the thousands of cases which develop when there is no history of trauma.

The following cases were the only ones that seemed to fulfil our postulates, thereby placing them in the class of malignancy related to trauma and therefore compensable:

REPORT OF CASES

CASE 1.—A man, aged 60, referred by Dr. Hohlman of Kewanee, Ill., received an injury, July 28, in which his left arm was forced backward in acute extension. He felt something crack in his shoulder, and at once experienced intense pain; he could not move his arm. He was taken at once to Dr. Hohlman, and a roentgenogram showed a fracture through the acromion process. He was treated for fracture. Two weeks after this injury, a swelling appeared over the posterior aspect of the shoulder and the scapula. This was considered to be a hematoma and was aspirated three times, a dark red bloody fluid being obtained. September 3, the patient entered St. Luke's Hospital. Examination showed a swelling on the posterior aspect of the shoulder and scapula the size of a grapefruit. It had hard indurated margins and fluctuated in the center. The arm could not be abducted more than 30 degrees without pain. The tumor was only slightly tender. The Wassermann reaction was negative. Three roentgenograms showed marked rarefaction involving the body of the scapula and bone destruction, including almost the entire acromion. The roentgen-ray diagnosis was sarcoma. An examination at this time of the roentgenograms of July 28 showed that, in addition to the fractured acromion, there was a honeycombed appearance of the acromion process indicative of existing disease. This was undoubtedly a pathologic fracture. A roentgenogram of the lungs, made September 4, showed no sign of metastasis. After consultation with Drs. Hohlman and Ryerson, it was felt to be the wisest course to attempt local removal of this tumor. September 8, Dr. Mock removed a necrotic mass, in which were embedded particles of bone, and the diseased margin of the scapula. The entire area was thoroughly cauterized. Histologic examination showed papillary-like structures with cells resembling epithelium. These cells were large, about the size of cells in the zona glomerulosa of the suprarenal cortex and of about the same staining quality. Large masses of the tissue were necrotic. This was not a primary tumor of the bone, but rather a metastasis of a primary tumor of epithelial origin. The patient died within the first twenty-four hours following operation. The coroner's necropsy showed a small indurated mass in the stomach, which resembled an old ulcer, but which, the report stated, might be a cancer. Sections were not made. This coroner's report was issued before any of us were at all suspicious of a primary tumor elsewhere.

In this case it would seem that the company was responsible for the pathologic fracture and the treatment of this local condition, including the effort to remove this tumor, as set forth in postulate No. 7, but the company was not responsible for the death of this patient, as he was already doomed.

CASE 2.—A man, aged 67, a patient of Dr. Hopkins, Feb. 11, 1922, while working the reverse lever of an engine, was injured by the lever jerking back suddenly and pushing his right arm backward, causing sharp pain. He could not use the arm. A roentgenogram, taken at once, showed pathologic condition. Possibly, as in Case 1, this condition was overlooked. Two weeks later, the pain had disappeared under hot fomentations, and the patient was discharged. In another two weeks, the upper arm commenced to swell and to pain considerably. The arm just below the shoulder progressively enlarged. May 3, 1922, the patient was referred to Dr. Hopkins, who had a roentgenogram made. Dr. Hopkins also learned that the right arm had been fractured one year previous, at the site of the present swelling. No mention was made of this old fracture in the report on the first roentgenogram. The last roentgenogram, made by Dr. Edward Jenkinson, St. Luke's Hospital, showed an old fracture involving the upper third of the right humerus. About this, there was an abundance of new bone formation extending outward into the soft tissues perpendicular to the shaft. The diagnosis was osteosarcoma. This was held to be either an exaggeration of a sarcoma developing at the site of an old fracture, or a sarcoma following the injury. This case seems to meet the first four postulates, although it has been impossible to secure the first roentgenograms for study.

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[12] Bloodgood, Joseph: Address before ninth annual convention, International Association of Industrial Accident Boards and Commissions, Baltimore, Oct. 11, 1922.

Case 3.—This patient, one of Dr. Joseph Bloodgood's, was a physician, and therefore had more roentgenograms than the average patient. Early in July, he jumped over a wire fence, fell, and sprained his knee. July 10, a roentgenogram was taken and was negative. Pictures were taken every few days, because of the persistent pain, and the roentgenogram of August 20 showed a lesion; September 1, this was shown as a definite tumor on the condyle. The leg was amputated—this was seven years ago—and the histologic specimen showed a giant cell tumor which Dr. Bloodgood believes now was a benign tumor. This case, occurring in a surgeon and observed by good surgeons, seems to fulfil all the postulates. The only question here is that Dr. Bloodgood states that in the first roentgenogram taken there was a lighter area which one might think was a lesion, but a roentgenogram of the other knee showed the same lighter area. In the opinion of this eminent surgeon, the case was definitely a giant-cell tumor following trauma.

Case 4.—A man, aged 40, a patient of Dr. F. G. Jackson of Muncie, Ind., was injured in the right knee in January, 1919, by being struck on the inner aspect with a piece of pig iron. The skin was broken, and the soft tissues became infected. A roentgenogram was not taken at first, but careful examination at the time revealed no abnormal bone condition. The infection gradually subsided but would not heal. In April, roentgen-ray examination showed some rarefaction in the inner condyle of the femur. In Dr. Jackson's absence, the bone was curetted by another surgeon. The wound still did not heal and Dr. Mock was called in consultation. From a study of the roentgenogram and of the tumor, which was now palpable, a diagnosis of sarcoma was made, and the leg was amputated. The histologic report at that time was large spindle-cell sarcoma. The patient was alive five years after the operation, so that we believe this was also a giant-cell sarcoma. This case fills all the postulates, except absence of definite diagnosis of preexistent bone tumor. The bridging signs following the injury were so definite that, if the condition existed prior to the injury, one must agree that it was probably exaggerated by the trauma or at least was in all probability a compensable case.

Case 5.—A man, aged 32, a patient of Dr. L. L. McArthur, was injured in February, 1924, by being pinched between a tractor and a disk. The legs, pelvis and scrotal region were injured. The left testis was painful and continued so, and within a month the testis was noted to be enlarging more at the lower pole, and became numb so that it was not tender to touch. Two years ago, the left testis was pinched while the patient was climbing a fence. Previously, there were several other instances of trauma to the testis. On removal, it was found twice the normal size and nodular. The epididymis was enlarged; the vas deferens was not enlarged and was not nodular; the testis was freely movable. The remainder of the examination was negative. The Wassermann reaction was negative. A roentgenogram showed the lungs to be normal. The histologic findings showed fibrous tissue septums surrounding irregular masses of large mononuclear cells; the tissue cells presented the essential characteristics of those of sarcoma of the testis. Irregular portions of the tissue were necrotic. The diagnosis was teratoma.

This case seems to meet all the postulates placing it in the compensable class of tumors. Teratomas are very common in the testis, and it would be difficult to say which of the patient's injuries, if any, had played a part in the development.

Case 6.—A man, aged 63, a patient of Dr. Plummer, was injured in August, 1923, when he bumped his left shin on the steps when climbing into a cab. The skin discolored and remained sore. In October, 1923, while he was working under an engine, the ballast rock caused the left shin to become more sore, and the patient noticed two small nodular masses in this region. This increased in size and, Nov. 14, 1923, he was operated on at Shawnee, Okla., and a diagnosis of sarcoma was made, of the round-cell and mixed-cell types. The patient entered St. Luke's Hospital in Dr. Plummer's service, April 23, 1924. He had received roentgen-ray treatment prior to this. On entrance to the hospital, the left leg was swollen, painful, tender and indurated; there was a brawny scaling from knee to ankle. The general examination was negative, and the Wassermann reaction was negative. A roentgenogram, taken April 24, 1924, showed a diffuse destructive process involving the shaft of the left tibia; it had a moth eaten, punched out appearance. The diagnosis was chronic osteomyelitis, sarcoma or syphilis. The pathologic report, May 28, 1924, following removal of tissue from the left leg, revealed irregular masses of large epithelial cells arranged like zona glomerulosa of the suprarenal cortex. The cell cystoplasm was finely vacuolated. The diagnosis offered metastatic malignant tumor, or primary tumor hypernephroma. June 3, there was evidence of a pathologic condition of the bone in the upper third of the left femur. There was metastatic malignancy, but there were no other bone pathologic changes elsewhere in the body. The right upper quadrant of the abdomen showed a large shadow from the eleventh dorsal to the third lumbar which might have been due to the kidney; the spleen was enlarged. June 5, the right kidney was palpable. June 27, a roentgenogram following pathologic fracture disclosed a fracture involving the upper third of the femur below the trochanter. The fractured ends showed destruction due to malignancy. The patient died, October 30; there was no necropsy. This case meets the requirements given in the seventh postulate.

Case 7.—A man, aged 64, a patient of Dr. John S. Coulter, was injured in October, 1919, by falling ten steps and striking on his hip. He was able to get up and continue work the rest of that day and worked until noon of the following day, when he quit because of pain in the right hip. The family physician called the day following the accident. He reported that the buttocks were discolored. The patient was treated at home until November 10, when he went to a hospital. A roentgenogram was taken, which showed no fracture. He returned to the hospital, March 1; under general anesthesia, the right sciatic nerve was stretched and injected because of severe pains in the hip. The roentgenogram findings again were reported negative. The patient was examined for the first time by Dr. Coulter in April, 1920. Dr. Coulter reported no tumor mass, but found shortening and atrophy of the right leg. He stated that the roentgenogram taken in March was extremely poor, making accurate diagnosis impossible, but it was evident that there had been some injury to the acetabulum. Dr. Coulter asked for further roentgen-ray plates to be taken. His next report, August 30, states that the patient had been under the treatment of several different surgeons and that no additional roentgenograms were taken until August 11, when Dr. Carl Davis examined the patient and made a diagnosis of sarcoma. The last roentgenograms showed bone tumor of the right femur and pelvic bones. Dr. Coulter reexamined the roentgenograms of March 1 and stated that the slight roughening observed in the acetabulum at that time was undoubtedly due to tumor. The patient died shortly afterward.

Dr. Coulter could see no evidence of pathologic changes in the roentgenogram of November 10, a month after the injury. The roughening of the margin of the acetabulum was observed in the roentgenogram of March 7. The sarcoma was finally diagnosed by Dr. Davis, August 11. There were very definite bridging symptoms from the time of the injury until the tumor was definitely diagnosed. Dr. Coulter later unearthed roentgenograms taken in May, which showed a fracture of the neck of the femur, which, he states definitely, was not present in March and which he believes was a pathologic fracture. In his final report, he stated that he believed this was a compensable sarcoma. It seems to meet all the postulates set forth above.

Case 8.—A man, aged 58, a patient of Dr. Cummiskey, examined by Dr. Mock, Nov. 5, 1923, was injured, July 10, 1923, when he was knocked down by a horse, which stepped on the left side of his head, bruised and contused the left side of the body, injured the left eye, knocked out several teeth, and paralyzed the left side. He was taken immediately to

Alexian Brothers Hospital, where he remained for five weeks. He had been under ambulatory treatment until he was referred for examination because of marked swelling and induration over the left lower jaw. Examination showed a definite tumor mass over the left lower jaw exactly at the site where the three teeth had been knocked from the jaw. Two badly infected stumps remained. There were still signs of scars from the former injury, and a spastic condition of the left arm and leg was still present. Roentgenograms were taken for the first time, October 31, and examination of these films showed a destructive process in the ramus of the lower jaw. This destructive process consisted of a complete absence of the jaw bone for a width of approximately 2 inches of the alveolar surface, extending in a cone shape to within half an inch of the angle of the jaw. At this point there was a fracture of the remaining portion of the bone, undoubtedly a pathologic fracture. The soft tissues and mucous lining of the lower maxilla and floor of the mouth were indurated and in some places were sloughing. The glands of the left side of the neck were indurated and enlarged. The diagnosis was carcinoma of the lower jaw. This diagnosis was confirmed later by an examination of sections. The patient died a few weeks later, and as he had no heirs the case was never contested.

We reported this case as carcinoma following injury, because the surgeon who originally saw the case definitely stated that teeth were knocked out and there was considerable trauma to the alveolar processes and the soft tissues in the floor of the mouth, but there was no evidence of tumor formation. This tumor became demonstrable four months later. It developed at exactly the site of trauma, and there were bridging signs from the time of injury until tumor was diagnosed.

Case 9.—A man, aged 63, a patient of Drs. John S. Coulter and Paul Magnuson, was injured, March 8, 1924, when a weight fell on his right leg. The leg became black and blue, and he was forced to stay in bed. He did not see a physician until March 16. He was first seen by Dr. Coulter, March 27, when a roentgenogram was taken of a swelling extending from the lower third to the middle third of the right leg. This roentgenogram gave a faintly visible outline of the tumor of the soft tissues, and the tumor did not seem to be connected with the bone, although there was a slight irregularity in the periosteum of the tibia. Calcium deposits within this tumor ran parallel with the shaft of the tibia rather than perpendicular. In summarizing his examination, the physician mentioned the possibility of a sarcoma, but as the patient stated he was considerably better than at the time of injury this was thought to be a hematoma that showed signs of ossification. April 24, Dr. Coulter reported that the patient complained of constant pain and weakness in the right ankle. The swelling was tense and fairly soft and did not increase in size at this time. A roentgenogram showed no change in the tumor mass. October 23, a roentgen-ray picture showed the tumor to be larger, and there was definite involvement of the periosteum of the tibia. There were no perpendicular deposits of calcium extending from the periosteum into the soft tissues. The patient was referred to Dr. Magnuson, who removed a section which was frozen. A diagnosis was made of sarcoma, and the leg was amputated above the knee. This was later reported as a periosteal sarcoma.

This case was treated as a compensable case. The history of the injury is rather indefinite, and it is questionable whether this was not a preexistent tumor. Otherwise the case seems to meet all the postulates set forth above.

Five other cases similar to the foregoing were found which were treated as compensable conditions, and which seemed to meet the postulates as definitely as the nine cases reported.

CONCLUSIONS

1. The advent of certain recent social legislation has made it obligatory for the surgeon to decide which particular cases of malignancy can be definitely ascribed to trauma.
2. There is no justification for assigning trauma as the etiologic factor in any particular case, unless this can be proved with scientific accuracy.
3. In the great majority of cases commonly reported as the result of trauma, such an etiology cannot be scientifically established.
4. The method of testing each case by the application of a set of postulates has resulted in a great reduction in the percentage of cases reported as caused by trauma.

122 South Michigan Avenue.

A DEPARTMENT OF PHYSICAL THERAPY

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Beekman Street Hospital was reorganized in the spring of 1924. When the new staff decided to devote more attention to the care of industrial patients, it was believed necessary that they should receive physical therapy. I was asked to organize and take charge of the new department. The original space allotted for the department was about 1,100 square feet, and this was sufficient for about nine months, when plans had to be made to enlarge it. At present even the new department of 1,900 square feet is proving to be too small. When space is considered in planning a department of physical therapy, it always would be wise to make the minimum 2,000 square feet, even in a small hospital of 100 beds. It is particularly difficult to expand a department, as the wiring and arrangement of apparatus should be planned originally to last for a long time.

The apparatus mentioned below might well be taken as a standard of minimal equipment, which, with the usual cash and hospital discounts, can be bought for less than $5,000. When the department moved in June, 1925, it was considered necessary by other members of the staff to purchase a second static machine. This is mentioned because the suggestion came from the surgical staff, which had had a year to observe how useful static electricity was, and realized that with a second machine more patients could be handled. This additional machine was bought second-hand, which helped keep the entire cost under $5,000.

The equipment at Beekman Street Hospital consists of:

1. Two sixteen-plate static machines.
2. Three high frequency machines, one of which is portable.
3. One Morse wave generator.
4. One Bristow coil.
5. One galvanic and faradic wall plate.
6. One galvanic and sinusoidal wall plate.
7. Two air cooled mercury vapor arc lamps.
8. One water cooled mercury vapor arc lamp, portable.
9. Four large thermolites.
10. Six small thermolites.
11. One "deep therapy" lamp.
12. Nine massage tables.
13. Two desks, one filing cabinet, and chairs.

In spacing this apparatus around the department, certain factors were necessary to consider. As a static machine makes quite a noise when used to give the static wave current, it is best to place these machines in one room divided off by a partition. The minimal floor space in which a sixteen-plate static machine can be installed is 15 feet square. If it is possible to allot a space 15 by 18, it is even better. It is also necessary that the rooms in which these machines are set up have as much ventilation and sunlight as possible. It is handy to have water in a static room because electrodes should be wet when put on the patient. Each machine requires two ground wires, and it is found to be most practical to have them overhead. With the two machines working at Beekman Street Hospital, one machine is grounded to the sprinkler system and the other to the steam radiator, while "treatment grounds," as they might be called, are attached to a drain pipe and a hot water pipe. The room is partially divided in half by a 7 foot office partition, and curtained across the door so that patients can undress without seeing one another. The other rooms at Beekman Street Hospital are divided into cubicles by means of wires stretched from wall to wall, 7 feet from the floor, from which ordinary hospital crib sheets are suspended by hook safety pins. Crib sheets are of a standard size, 6 feet in length, and can be washed easily in the hospital laundry and really are much better than curtains specially made.

The massage tables used are of heavy construction, measuring 84 by 30 inches. The tops are covered with padding and a waterproof material, and one end is raised as a headpiece. The top of the tables is 30 inches from the floor. This height is specified, as it makes it much easier for the masseurs to give treatments and it is not too high for patients to mount. Each table has a shelf underneath, 1 foot from the floor, on which towels and electrodes can be placed; and instead of having hooks in the cubicles, clothing can be put on this shelf and kept with the patient. This system seems better than the more expensive way of providing gowns and lockers in a dressing room.

In building the new department at Beekman Street Hospital, the director had some trouble in impressing on the architect the necessity of a soft floor covering. The technicians are on their feet continuously, and a concrete floor will soon incapacitate them and lower the efficiency of the department. Although a little more expensive, it was finally decided to cover the floor at Beekman Street Hospital with a rubber composition. This also has an added advantage in the fact that the liability of any machine becoming grounded and the technician unexpectedly shocking the patient is obviated.

In figuring on the care of the personnel of the department, it is necessary to provide a toilet and a dressing room of sufficient size to permit them to change to their uniforms and have their clothes under lock while they are working.

In installing current in a department, it is a great advantage to have outlets placed in pairs so that both alternating and direct currents are at all places. Direct current outlets should be wired with polarity plugs and the polarity of each outlet should be exactly the same, so that apparatus can be moved from one place to another without the necessity of testing the polarity. The alternating current outlets should be of an entirely different form so that the direct current plugs will not fit into them. The motors that run the static machines are best run with 220 volt direct current, since the rheostat control of these motors on direct current is much more delicate than if alternating current motors are used. Static machines should rotate over a range of from fifty to 250 revolutions per minute and this range can best be obtained by using direct current motors. However, if only alternating current is available in a hospital, static machines can be used, but not as efficiently as with direct current.

In speaking of static machines, it is worth mentioning that the best machines to use are of the Holtz model, with a Wimshurst charger on the end. The advantages of such a model are described in works on the subject, such as those written by Humphris of London and Massey of Philadelphia.

For sensitive galvanic work, especially when the brain or nerves are being treated, it is necessary to have a dependable source of a smooth galvanic current. It has been found best to use the stock radio B batteries for this work. For ordinary galvanic treatments, however, a wall plate or one of the new model generators will give a good, smooth galvanic current.

The list shows two air-cooled ultraviolet lamps. Only one of these is used in the department. The other one, which is a cheaper form of the same lamp, is kept in the wards all the time to give ultraviolet treatments to bed patients.

Good nonmedical assistants, known as "physiotherapy technicians," are particularly difficult to find. At Beekman Street Hospital the technicians were formerly in the government service, and it is felt that such are the best trained that are available for hospital work. Physiotherapy technicians have formed an association, which at present is called the "American Physiotherapy Association," and technicians may be obtained by communicating with the secretary,[1] who has charge of the vocational bureau. It has been estimated in the army that the best results can be obtained by requiring a technician to do not more than twenty-two treatments daily and as patients average about two and a half treatments each, according to the number of patients expected, one can estimate about the amount of nonprofessional help required.

Another important part of a department of physiotherapy is the matter of keeping records. I will not go into a detailed description of the Beekman Street Hospital system of physiotherapy records, but refer those interested to an article[2] which describes in detail the record system used. No fault has been found with this system in the year and a half it has been used.

During the first month the department was opened at Beekman Street Hospital, there were 600 visits of patients, who received 1,479 treatments. Since that time the growth has been practically continuous, and after fifteen months of operation the report shows that during November, 1925, there were 1,359 visits and more than 4,300 treatments given.

Beekman Street Hospital has no equipment for mechanotherapy or hydrotherapy, because it is felt that exercise, active, passive and resistive, done under the careful eye of a technician, is better than attaching the patient to some machine that makes him do only passive exercise. Hydrotherapy has rather a small field in the present work of physiotherapy, so it has not yet been installed at Beekman Street Hospital, where the cases are all of an acute nature. Such treatment is of more use in a hospital where chronic conditions are treated.

Each week, when full ward rounds are made by the entire surgical staff, the director of the department of physiotherapy participates in these rounds and reports on all cases under his care. This also gives the staff a chance to refer cases to the department after a consultation at the bedside. Such a procedure gives the surgical staff an insight into the way physiotherapy can help, and the surgeons at Beekman Street Hospital can now order treatments themselves with a good understanding of how physiotherapy can get the results that they wish.

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[1] Miss C. Grace Courter, 389 Clifton Avenue, Newark, N. J.

[2] Titus, N. E.: Physiotherapy Department of Beekman Street Hospital, New York, Mod. Hosp. **24**: 400 (May) 1925.

SEROLOGIC STUDIES OF PROTEINURIAS

I. RESULTS OF PRECIPITIN TESTS FOLLOWING INJECTION OF ANTISTREPTOCOCCIC SERUM AND OF NORMAL HORSE SERUM *

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Often the physician, in treating a patient, assumes that the presence of protein in the urine is pathognomonic of renal disease. This may be true in a great number of cases, yet a certain percentage of patients coming under the observation of the physician show protein in urine when renal disease cannot be demonstrated. For example, after the ingestion of a heavy protein meal, the urine may show a considerable amount of protein. Occasionally the urine of a patient suffering with a metabolic disease contains protein in spite of the fact that renal disease is not demonstrable.

Sollmann and Brown,[1] in 1901, noted the presence of protein in the urine of human beings and animals after its parenteral introduction. They did not, however, use serologic methods to identify the protein excreted.

Cramer,[2] in 1908, noted that the injection of egg white and ox serum into the dog produced coagulable protein in the urine. The amount of protein excreted when the ox serum was administered was comparatively small. Evidently the proteins constituting ox serum were more easily metabolized by the body tissues. Cramer collected the samples of urine at two day intervals for four days. At the end of this time, the urine became free from protein. He used the intraperitoneal route for the administration of proteins to the animals. This probably accounts for the presence of protein in the urine for four days. Cramer's protein tests were nonspecific. He noted that the amount of egg white excreted varied from 25 to 90 per cent., while the ox serum was practically all assimilated by the body.

Freidmann and Isaac,[3] in 1905, reported that the subcutaneous injection of egg white into dogs and goats resulted in its excretion in a noncoagulable form. Although not completely utilized, it was partially broken down during its stay in the tissues.

A type of proteinuria is commonly seen in patients receiving treatment with serums or other foreign proteins. One case that came under my observation was of especial interest. A young physician suffering with a streptococcemia received as treatment large amounts of antistreptococcic serum, both intravenously and intraspinally. The urine collected yielded a heavy cloud of protein with the heat and acetic acid test. Only an occasional tube cast could be demonstrated to signify renal disease. After the serum treatment was discontinued, the urine returned to normal; all chemical protein tests proved negative. It has often occurred to me, since observing this case, that an unnecessary waste of serum takes place in the treatment of disease. This possibility, as well as the more common one of misinterpreting a positive finding of protein in the urine by ordinary chemical methods, has made a systematic serologic investigation appear desirable.

In this paper are reported the results of precipitin tests on the urine from patients who received antistreptococcic serum, and from dogs following the intravenous administration of normal horse serum.

The patients studied were in the erysipelas wards of Dr. J. C. Doane at the Philadelphia General Hospital. They were receiving antistreptococcic serum for the treatment of the disease. All the patients were in the second or third day of the disease. All were under 40 years of age, and offered an apparently good prognosis from the onset.

TABLE 1.—*Results from Precipitin Tests on Urine of Patients Receiving Antistreptococcic Serum Intravenously* *

Case	Amount of Serum Used, C c	Acetic Acid Albumin Test †	Precipitation Time Intervals (in Minutes from Time of Serum Administration) ‡							Case Reaction
			10	30	60	120	240	360	480	
1	100	V F. T.	0	0	+	++	±	0	0	None
2	100	V F T.	0	0	++	++	+	0	0	None
3	100	F T.	0	0	++	++	±	0	0	Chill
4	100	V. F T.	0	0	++	++	⩲	⩲	0	None
5	100	V F. T.	0	0	⩲	+	±	0	0	Chill
6	200	Negative	0	0	++	++	+	0	0	Chill
7	200	F T.	0	0	+	++	+	0	0	None
8	200	F T	0	0	+	+	⩲	⩲	0	None
9	200	F. T.	0	0	+	++	+	0	0	None
10	200	F. T.	0	0	+	+	⩲	0	0	None

* From the erysipelas wards of the Philadelphia General Hospital, patients treated under the supervision of Dr J. C. Doane (1923-1924) In all the cases the control urine was normal; 0 2 c c. of phenolized sensitive serum was used.

† V. F. T., very faint trace; F. T., faint trace.

‡ Faint trace, ⩲; trace, ±; light cloud, +; cloud, ++; heavy cloud, +++

TABLE 2.—*Results of Precipitin Tests on Urine of Dogs Following Administration of Normal Horse Serum* *

Dog	Amount of Horse Serum Injected, C c	Control	Precipitation Time Intervals (in Minutes from Time of Intravenous Serum Administration)									
			10	20	30	40	50	60	70	80	90	100
1	10	Clear	0	⩲	±	±	±	+	⩲	0	—	—
2	25	Faint cloudiness	0	0	0	+	+	++	0	0	—	—
3	25	Clear	0	0	+	±	±	±	±	0	—	—
4	25	Clear	0	0	0	++	++	+	0	0	—	—
5	50	Clear	0	0	⩲	±	+	++	±	0	—	—
6	50	Clear	⩲	+	++	+	±	±	+	0	—	—
7	50	Clear	0	0	++	Complete anuria followed by death						
8	50	Clear	0	0	0	±	++	++	++	++	0	0
9	50	Clear	0	0	0	+	+++	+++	++	+	Death of animal	
10	50	Clear	0	±	+	±	++	++	+++	++	0	0

* Experiments carried on in the Department of Physiology, University of Utah School of Medicine In the tests on Dogs 1 and 2, 0 2 c c of phenolized sensitive rabbit serum was used; on Dogs 3 to 10, 0 2 c c of betanaphtholized sensitive rabbit serum

Each patient emptied the bladder voluntarily or was catheterized, and was then given the antistreptococcic serum. Dosage ranged from 100 to 200 c.c. injected intravenously. The urine was collected at frequent intervals for eight hours. The precipitin test was made on each sample of urine as soon as possible after its collection. An acetic acid albumin test was made on each specimen. The results of this experiment are recorded in Table 1.

The technic of the precipitin test was as follows: Rabbits were immunized against horse serum, and their serum was collected after its titer had reached at least 1 : 60,000. To 3 c.c. of urine, 0.2 c.c. of sensitive serum was added at room temperature. In all the samples that were positive, the reaction was apparent within an hour. Urinary controls were used with each specimen tested. It will be noted that the urine of the patients receiving the serum first presented traces of horse protein in approximately one hour. This proteinuria continued for approximately four hours.

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* From the Physiological Laboratory, University of Utah

[1] Sollmann, Torald; and Brown, A C: J. Exper. Med 6: 207, 1901.

[2] Cramer, W.: J Physiol. 37: 147, 1908

[3] Freidmann, E, and Isaac, S: Ztschr. f. exper. Path u. Therap 1: 513, 1905.

The ten dogs used in this study were anesthetized with Grehant's solution[4] and morphin sulphate. Normal horse serum was injected into the external jugular vein in doses varying from 10 to 50 c.c. Because of inaccuracies that might result from catheterization of the animals, the urinary bladders were exposed by an assistant and circumpacked with sterile gauze. A two way stopcock with a needle attachment was then inserted through the bladder wall. Prior to the introduction of horse serum, the urine in the bladder was drained off and used as controls for each animal. After the introduction of the serum, withdrawals of urine were made at ten minute intervals. The first specimen was removed ten minutes after the introduction of the serum, and withdrawals were continued from sixty to 100 minutes. Eight of the ten dogs made an uneventful recovery. In the two that died, acute nephritis could not be demonstrated. Death in these cases was apparently due to anesthesia. The precipitin tests were made immediately after the last sample had been collected.

The following preliminary conclusions can be drawn from the dog experiments: The greatest amount of protein excretion in the urine of dogs after the intravenous injection of horse serum occurs within the first eighty minutes. Appreciable amounts of protein could not be detected in the urine until thirty minutes after intravenous administration. It would appear that each animal has a certain renal threshold for the elimination of foreign proteins.

SUMMARY

1. Horse proteins are definitely eliminated by the kidneys of human beings and dogs.
2. Intravenous injection apparently results in a more rapid elimination by way of the kidney than other parenteral routes described by other writers.
3. When large doses of serum in disease are administered by the intravenous route, some of the serum proteins are filtered through the kidney.
4. The present study indicates the use of highly concentrated serums in the treatment of disease.

1344 Glenmare Street.

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[4] Grehant's solution (Stewart: Manual of Physiology, Ed. 8, p. 202) consists of chloroform, 50 c.c.; 95 per cent. ethyl alcohol, 500 c.c.; distilled water, 500 c.c., of which 6 c.c. per kilogram, with an equal amount of water, is given by stomach tube.

Insanity and Genius.—A streak of insanity, a streak of genius and creative imagination is not harmful to the race. The danger to the race is not from a tendency to a high degree of plasticity of the highest evolutional level, but to an increase of an inborn tendency to a functional or organic regression of it, resulting in various degrees of imbecility. As the higher grade imbecile possesses the animal passions and is fertile, it follows that more than a streak of mental deficiency in a race constitutes an urgent social problem of national importance. Hitherto nearly all the efforts of the state have been toward legal detention of the mentally afflicted (under humane conditions, it is true), but little has been done in the way of prevention or cure.—Mott, F. W.: *J. Ment. Sc.* **71**:647 (Oct.) 1925.

NATIVE CASE OF INFESTATION BY THE FISH TAPEWORM, DIPHYLLOBOTHRIUM LATUM *

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Examination of published records shows that there have been eight unquestioned cases of native infestation with the fish tapeworm (*Diphyllobothrium latum*). These cases are those of Nickerson,[1] a boy aged 2 years, and a woman, Minnesota; of Warthin[2] and Arminen, a girl, aged 5 years, Michigan; of Riley,[3] a boy, aged 8 years, and an Indian child, Minnesota; of Calvin,[4] a girl, aged 7 years, and a boy, aged 3 years, Illinois, and of Wallace and Grant,[5] a woman, aged 25 years, Indiana.

A few cases of possible native infestation have also been recorded.[6] Owing to the fact that the patients in these cases were born abroad, there is some doubt as to their being true native cases even though the patients entered the United States as young infants. The extreme youth of patients in some of the undoubted native cases shows that infestation can occur at a very early age. Infestation also may continue for many years without showing symptoms caused by the worm.

These eight cases are sufficient to establish beyond a doubt the fish tapeworm as a parasite of man (definitive host) and of fishes (intermediate host) in the Great Lakes region of the United States. It seems desirable, however, to add a ninth case, in order to show the spread of the parasite and to point out that with the disposal of sewage into the Great Lakes the spread of this parasite will continue, and with the absence of fish inspection comparable to meat inspection, the fish tapeworm may some day become the most common large tapeworm of man in the Great Lakes region.

For the opportunity of reporting this case, I am indebted to Dr. Isadore Sandock of South Bend, in whose practice it occurred and who made the diagnosis of fish tapeworm infestation when the patient's mother, an unusually intelligent person, showed him spontaneously passed fragments of the worm.

REPORT OF CASE

A boy, aged 4 years, Jewish, born in South Bend, had never been farther away than Dowagiac, Mich. He lived at home with his parents, an older brother, his mother's sister and a maid. He always appeared normal and never showed any real symptoms of intestinal parasitism. Following the discovery of the parasite, however, his mother stated that for two years he had not shown the same physical activity as his brother, that his sleep was frequently restless, and that he had a tendency to pick his nose. At the time the worm was discovered he had an attack of scarlet fever, his only serious illness. At this time his mother noticed "great strings of material" in his stools, which, she states, had to be cut off.

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* Read before the American Society of Parasitologists and Section N of American Association for the Advancement of Science, Kansas City, Mo., December, 1925.

[1] Nickerson, W. S.: The Broad Tapeworm in Minnesota, J. A. M. A. **46**: 711 (March 10) 1906; The Broad Tapeworm in Minnesota, ibid. **74**: 457 (Feb. 14) 1920.

[2] Warthin, A. S.: Pub. Health, Michigan **7**: 78 (Jan.-March) 1912.

[3] Riley, W. A.: The Broad Tapeworm, Dibothriocephalus Latus, in Minnesota, J. A. M. A. **73**: 1186 (Oct. 18) 1919.

[4] Calvin, J. K.: Native Infestation by the Broad Tapeworm, Diphyllobothrium Latum, J. A. M. A. **78**: 84 (Jan. 14) 1922.

[5] Wallace, J. C., and Grant, Margaret: Infestation by Broad Tapeworm, J. A. M. A. **78**: 1050 (April 8) 1922.

[6] Warthin (Footnote 2); Becker, W. C.: Illinois M. J. **30**: 416 (Dec.) 1916.

This material was identified by Dr. Sandock as fragments of the fish tapeworm, and about a meter of them was brought to me for confirmation of identification. Shortly after the discovery of the worm and after the patient had fully recovered from his attack of scarlet fever, which was not severe, male fern was administered and the worm was expelled Since the expulsion of the worm the mother declares that the boy is much more active, sleeps better, and does not pick his nose. When I made the last blood examination, six months after the worm had been expelled, the boy seemed much more active than at the time of the first examination. Whether this was really due to the removal of the parasite or to the effects of a summer of outdoor life following a spring attack of scarlet fever cannot be said Blood examinations of the patient were made while the worm was present, and two months and six months after its removal. The improvement in the blood picture is so slight as to be almost negligible, especially in view of his attack of scarlet fever. The mother says that fish is eaten in the household about twice a week, and she feels confident that it has always been well cooked. The patient himself does not care much for fish, but the other members of the family, especially the father, are very fond of and eat much of it. Inquiry at a local fish market shows that much of the fish offered for sale is obtained from the Great Lakes.

Blood Examinations

Cells	Before Expulsion of Worm	Two Months After Expulsion	Six Months After Expulsion
Erythrocytes (per cubic millimeter)	4,070,000	4,180,000	4,550,000
Hemoglobin (Newcomer)	75	83	85
Leukocytes (per cubic millimeter)	6,100	9,100	6,300
Polymorphonuclears (per cent)	32	30	27
Eosinophils (per cent.)	2	2	3
Basophils (per cent.)	0	0	0
Small lymphocytes (per cent)	59	57	63
Large lymphocytes (per cent)	4	4	5
Large mononuclears (per cent.)	2	4	1
Transitionals (per cent.)	1	3	1

A fragment consisting of about 1 meter of fish tapeworm, *Diphyllobothrium latum,* all mature segments and all well preserved, was submitted for identification.

The stool before treatment was instituted was solid and weighed 33 gm One gram of this stool was emulsified with 25 c.c. of water, and 0.1 c c. of this emulsion contained 100 ova of *Diphyllobothrium latum,* indicating 825,000 ova in the entire stool.

The stool following a cathartic and before the administration of male fern was liquid, with a volume of 200 c.c.; 105 ova were counted in a 5 mm. width of 0 1 c.c of stool placed under a cover glass 50 mm. long, indicating 2,100,000 ova in an entire stool

After administration of male fern and a cathartic, the stool was liquid and contained 2,400 mm of *Diphyllobothrium latum.* The entire worm was well preserved; the width of the mature segments was 10 mm. and of the youngest segments attached to the main chain, 2 mm A small detached fragment, somewhat injured by washing, had a width of 1 mm. and an expanded end 2 mm. wide. This portion probably represented the head, although well defined bothria were not found on it. Numerous ova were present microscopically.

Two months after the expulsion of the worm, ova were not found in the stool; nor were they found after six months. The stools of the patient's mother, father, 8 year old brother, aunt and maid, all living in same house as the patient and eating the same food, failed to show the presence of ova

A few of the ova were washed free from most fecal débris and were kept in a conical glass many weeks at room temperature, the water lost by evaporation during this time being made up by the addition of distilled water At no time was there any evidence of development of an embryo in the ova.

COMMENT

This is believed to be the ninth native case of infestation with the fish tapeworm in the United States. Infestation with the fish tapeworm may occur at a very early age; in the present case earlier than 4 years and in cases reported by others as early as 2 years.

Infestation in the present case appears to have been an accident or else young children are more susceptible than adults, as an older brother in this case and four adults all eating the same fish were unaffected.

A person harboring a fish tapeworm may expel into the sewerage system about 1,000,000 ova daily. Ova do not develop readily under laboratory conditions.

The food requirements of a tapeworm must be considerable when it is realized that the worm can produce germ cells of both sexes at the rate of about a million each twenty-four hours. In the average patient this is probably well taken care of by that "factor of safety" which impels most persons to eat more than is really needed for immediate needs.

A person harboring a fish tapeworm may show almost no symptoms caused by its presence, and if the worm does not show evidence of disintegration there may be no essential change in the blood picture from normal.[7]

The spontaneous appearance of the parasite in this case during an attack of scarlet fever is interesting in showing the tendency of a parasite to leave its host when the normal environment of the parasite becomes altered.

Continued pollution of Great Lakes waters by sewage will probably cause the fish tapeworm to become a common parasite in the northern Middle West. South Bend sewers empty into the St. Joseph River, eventually reaching Lake Michigan.[8]

122 North Lafayette Boulevard.

THE EFFECT OF GAS ANESTHETICS USED IN LABOR

ON THE BLEEDING AND COAGULATION TIME OF THE NEW-BORN *

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A considerable discrepancy exists among the values obtained by many observers for the normal bleeding and coagulation time of the blood in the new-born. These figures for both bleeding time and coagulation time vary from three minutes to ten minutes.[1] When similar methods of technic are used, it is obvious that there is some influential factor that must be taken into consideration. In an endeavor to discover this factor, the bleeding and coagulation time was taken on 600 infants at birth and during the first ten days of life, the entire series covering a space of two years.

MATERIAL

Of the 600 cases in this series, 200 patients were delivered with ethylene, 200 with nitrous oxide, and the remaining 200 without an anesthetic. This was easily made possible by the condition existing in the obstetric department whereby one obstetrician used ethylene in his cases, and another used nitrous oxide. The cases in which no anesthetic was required, or so-called normal cases, were the regular ward cases in which no anesthetic was given unless a long labor or operative measure resulted.

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[7] Haden, R L: Am J M Sc **166:** 338 (Sept) 1923

[8] Lyon, M W, Jr · Infection by the Broad Tapeworm, Diphyllobothrium Latum, J A M A **74:** 655 (March 6) 1920

* From the pediatric and obstetric wards of the Presbyterian Hospital of Chicago

[1] Falls, F H · Coagulability of the Blood During Pregnancy, and in the New-Born, J A M A **79:** 1816 (Nov 25) 1922. Rodda, F. C.: Determ [illegible] of Blood in New-Born, Am J. Dis Child. **19:** 2[illegible], W. P: Dearing, B F., and others: Blood [illegible], Am J Dis Child. **22:** 525 (Dec.) 1921.

The length of time of the anesthesia was taken into consideration, nothing under thirty minutes being considered in the anesthetic series. It was the practice of both obstetricians to start the anesthetic at the end of the first stage of labor, and very rarely did this run over two hours. The mean of the length of time of the anesthetic in the nitrous oxide series was found to be one hour and forty-nine minutes, and for the ethylene, one hour and fifty-four minutes.

In the two year period covered by this series of 600 cases, the coagulation and bleeding time was taken consecutively on each child born in the department. This was taken at birth, and during the first ten days of life.

Bleeding and Coagulation Time of Six Hundred Newly Born Infants

	Birth		24 Hours		48 Hours		6 Days		9 Days	
Average Time of This Series	Bleeding Time, Min.	Coagulation Time, Min.	Bleeding Time, Min.	Coagulation Time, Min.	Bleeding Time, Min.	Coagulation Time, Min.	Bleeding Time, Min.	Coagulation Time, Min.	Bleeding Time, Min.	Coagulation Time, Min.
No anesthetic	3	4½	3	4	3	4	3	4	3	4
Nitrous oxide	4	6	3½	5	3	5	3	4½	3	4
Ethylene.....	5	7	4	6½	4	6	3	5	3	4½

METHOD

A slight modification of Rudolf's[2] method was used in this series. The skin of the heel was thoroughly cleaned with green soap and alcohol, and allowed to dry. A deep puncture was then made in the heel, which resulted in a good flow of blood. This was drawn up into two glass pipets about 1 mm. in diameter, and 18 cm. long. The amount of blood drawn up should be approximately 9 cm. in each tube. The time of drawing the blood was noted, and the tubes immediately put into an incubator (dry heat) at a constant temperature of 20 C. The entire procedure was always carried out in the nursery, which was kept at a constant temperature throughout the year. At the end of one minute, one of the tubes was removed and a small piece broken from the end. This was repeated every thirty seconds until a thread of fibrin appeared between the broken ends. The time between the puncture and the appearance of the fibrin was taken as the coagulation time. The second tube was used as a control.

The bleeding time was taken by the method of Duke.[3] A puncture in the heel was made as described, and the accumulated drop blotted away by a piece of sterile gauze until no drop formed. The time between the appearance of the blood and its cessation of drop formation is the bleeding time.

These procedures were carried out immediately after birth, and at intervals thereafter of twenty-four hours, forty-eight hours, six days, and nine days. This work was always carried out by the same person to avoid individual differences that might prove a source of error. It was for this reason that the tests were made only every three days after the first two days, instead of every day. It was found that to take the blood every day, it would be necessary to distribute the work between two persons, and it was believed that this was not worth the possibilities of individual differences being a source of error.

The longest time was found in the series of no anesthetic. This was ten minutes bleeding time and thirteen minutes coagulation time. The child was one of twins, and weighed 5 pounds 12 ounces (2.6 Kg.). His sister's bleeding time was five minutes, with six minutes coagulation time. The labor was multiparous, lasting eight hours. Both children had normal bleeding and coagulation time at the end of nine days.

The next longest time was eight minutes bleeding time and twelve minutes coagulation time. This was a thirty-six hour labor, with nitrous oxide anesthesia of two hours and fifteen minutes, which was terminated by midforceps. At the end of nine days the infant's bleeding time corresponded to the normal for nitrous oxide, as shown by this series.

Both of these children were slightly cyanotic at birth, but had no other symptoms. They received no treatment of any kind and were perfectly normal thereafter.

COMMENT

The infants tested were of a sufficient number, and the period of time covered of such length, to show that the anesthetic used in labor has a definite effect on the coagulation and bleeding time of the new-born. This effect is a lengthening, which is greater in ethylene and less in nitrous oxide.

Graham,[4] in his work on the etiology of Weil's disease and other hemorrhagic conditions of the new-born, discussed the possibility of the anesthetic used in labor affecting the coagulation time. That chloroform and other liver poisons also influenced hemorrhage was stated by Whipple,[5] who found a drop in fibrinogen during chloroform anesthesia. Corin and Ansiaux,[6] at an earlier date, had found a drop in fibrinogen in phosphorus poisoning.

Assuming that fibrinogen is produced in the liver, or under its direct influence, there must be some injury or derangement of the liver function by the gas anesthetics that causes this drop in the normal production. This raises the question that if there is liver injury, why does it not appear in other clinical manifestations?

This may be answered in two ways. First, while it is true that a decrease in the concentration of blood fibrinogen has been reported in some cases of liver injuries, it is also true that there may be a great deal of pathologic change in the liver without disturbance of the fibrinogen concentration or blood coagulation. This can be explained, however, by the fact that only from 15 to 20 per cent of the normal quantity of liver tissue is necessary to meet the ordinary body needs.[7] Second, under the influence of certain substances such as the proteoses, the liver produces products that both accelerate and retard coagulation, the so-called antithrombin and heparin elements. Do the gas anesthetics act similarly to the proteose substances, or do they have the common property, such as partial asphyxia, which causes these substances that retard coagulation to be formed?

SUMMARY

1. Nitrous oxide causes a prolongation of the average bleeding time at birth of one minute, and the

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[2] Rudolf, R. D.: A Clinical Method of Estimating the Coagulation Time of the Blood, Am. J. M. Sc. **140**: 807, 1910.

[3] Duke, W. W.: The Relation of Blood Platelets to Hemorrhagic Disease, J. A. M. A. **55**: 1185 (Oct. 1) 1910.

[4] Graham, E. A.: Chloroform Poisoning in the New-Born, Tr. Chicago Path. Soc. **8**: 89, 1909; Pathogenesis of Hemorrhagic Diseases of the New-Born, J. Exper. Med. **15**: 307, 1912.

[5] Whipple, G. H., and Hurwitz, S. H.: Fibrinogen of the Blood as Influenced by Liver Necrosis of Chloroform Poisoning, J. Exper. Med. **13**: 136, 1911.

[6] Corin, G., and Ansiaux, G.: Untersuchungen über Phosphorvergiftungen, Vrtljschr. f. gerichtl. Med. **7**: 80, 1894.

[7] Mann, F. C.: Studies on Physiology of the Liver, Am. J. Physiol. **65**: 267 (July) 1923.

coagulation time of two minutes. Both, however, correspond to normal in nine days.

2. Ethylene causes a prolongation of the average bleeding time at birth of two minutes, and the coagulation time of three minutes. Both, however, have practically returned to normal in nine days.

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GASTRIC ACIDITY IN SYPHILITIC CHILDREN *

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In view of Neugebauer's report [1] on the hypo-acidity found in syphilitic persons, it was thought that an examination of the gastric acidity in a group of syphilitic children might prove interesting. The German observer found in a group of 200 syphilitic recruits from 20 to 25 years of age that, before treatment was carried out, 62 per cent. manifested hypo-acidity, 18 per cent. anacidity and 17 per cent. hyperacidity. In general, he found a persistent hypo-acidity to the point of achylia. Neugebauer offers the explanation that the lowered acidity is due to a change in the tonus of the vagus, a direct disease of the mucosa or a combination of these factors. He attributes the cases of hyperacidity to a temporary phase preliminary to the ultimate anacidity.

Table 1.—*Analysis of Gastric Contents of Twenty-One Syphilitic Children After Test Meal*

Patient	Age	Wassermann Reaction Plus	Free Acidity	Total Acidity
1. N. I.	8	4	12	57
2. E. S.	13	4	0	8
3. S. A.	13	3	17	42
4. M. M.	6	4	0	8
5. F. A.	9	1	3	16
6. P. C.	9	4	6	18
7. I. B.	10	1	14	28
8. L. M.	10	1	11	21
9. J. S.	12	4	16	40
10. E. P.	10	4	17	38
11. R. B.	4	4	10	20
12. E. S.	13	4	9	16
13. A. B.	11	4	8	19
14. F. F.	11	3	11	22
15. S. B.	10	4	28	50
16. H. B.	4	4	0	12
17. J. C.	13	4	0	20
18. R. F.	10	1	6	13
19. L. F.	11	4	17	34
20. F. Z.	13	4	0	5
21. E. K.	13	3	14	36
Totals (21 patients)	210		199	5.3
Averages	10		9.5	24.9

In our investigation, twenty-one children, from 4 to 13 years of age, with positive Wassermann reactions, who were under treatment with neo-arsphenamin for varying periods, were studied. Test meals were given, consisting of two soda crackers and 150 c.c. of slightly sweetened weak tea, and the contents aspirated one hour later. The titrations were performed with dimethyl-amido-azobenzene for free, and phenolphthalein for total, acidity indicators.

To evaluate our findings, a group of children without syphilis and gastro-intestinal disturbance were administered similar test meals and their gastric contents analyzed. The results obtained are given in Table 2.

The groups in Tables 1 and 2 offer a fair basis for comparison with the syphilitic factor as the variant as the average age was similar, the same test procedure was carried out, and there were no gastro-intestinal complications in the control series. Comparison shows that, as a group, the syphilitic children manifest a value of 9.5 free acidity against 19.4 of the controls, proportionately 50 per cent. Total acidity values are 24.9 against 41.6, a proportion of 60 per cent.

From the standpoint of individual cases, it is seen by reference to Tables 1 and 2 that one of the twenty-one syphilitic children gave a free acidity above the normal average, 19.4, as compared with seven of the seventeen controls, or 4.4 per cent. against 41 per cent. There were twenty of the twenty-one syphilitic children below the normal free acidity average, as compared with ten of the seventeen controls, or 95.6 per cent. against 59 per cent. This analysis indicates that the syphilitic child is, approximately, one tenth as likely to manifest free acidity above the normal average (4.4 per cent. against 41 per cent.) and, approximately, twice as likely to manifest lowered acidity as the normal child (95.6 per cent. against 59 per cent). As regards total acidity, three of the twenty-one gave values above the normal average, 41.6, as compared with seven of the seventeen controls, or 13.7 per cent. against 41 per cent. Below the normal total average were eighteen of the twenty-one syphilitic children compared with ten of the seventeen controls, or 86.3 per cent. against 59 per cent. This analysis indicates that the syphilitic child is approximately one third as likely to manifest total acidity above the normal average as the normal child and approximately half again as likely to run below the normal average.

Table 2.—*Analysis of Gastric Contents After Test Meal in Seventeen Children Without Syphilis or Gastro-Intestinal Disturbance*

Patient	Age	Free Acidity	Total Acidity
22. S. W.	8	30	50
23 H. M.	10	18	30
24. B. R.	12	23	40
25. I. W.	7	12	28
26. R. R.	11	12	26
27. S. R.	13	15	37
28. H. S.	12	10	32
29. M. G.	10	12	28
30. L. A.	8	10	28
31. E. C.	11	22	43
32. I. S.	10	18	29
33. H. S.	12	19	47
34. F. B.	10	27	57
35. B. W.	11	12	63
36. M. G.	10	22	37
37. M. G.	14	56	69
38. S. A.	10	12	72
Totals (17 patients)	180	330	706
Average	10.6	19.4	41.6

Table 3.—*Group Comparisons with 10 Years of Age as Dividing Line*

	Free Acidity			Total Acidity		
	Control	Syphilitic	Per Cent. of Hypo-acidity	Control	Syphilitic	Per Cent. of Hypo-acidity
Below 10 years	17.9	9.7	54	39.9	25.5	64
Above 10 years	21.1	9.2	43.6	43.4	24.2	58

In the publications on gastric contents in children, notably those of Brüning,[2] Jacobsen [3] and Hertz,[4] age groups are frequently considered. Analysis of our results with 10 years of age as the dividing line, after Brüning, furnishes the data given in Table 3.

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* From the Serology Clinic of the Michael Reese Dispensary.

[1] Neugebauer: Wien. klin. Wchnschr. **27**: 845, 1914.

[2] Brüning, H.: Deutsch. med. Wchnschr. **46**: 883 (Aug. 5) 1920.

[3] Jacobsen, A. T. B.: Gastric Secretions in Young Children, Ugesk. f. Læger **81**: 863 (May 22) 1919; abstr., J. A. M. A. **73**: 306 (July 26) 1919.

[4] Hertz: Acta Paediat. **1-2**: 298, 1921-1923.

The figures in the table demonstrate that in both age groups above and below 10 years the free and total acidity values are markedly lower in syphilitic children than in controls. From the standpoint of individual cases, the data in Table 4 are obtained.

Table 4.—*Comparison of Acidity Values in Syphilitic Children and Controls Under 10 Years*

		Free Acidity				Total Acidity			
		Above		Below		Above		Below	
	Number	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
Syphilitic	11	1	9	10	91	2	18	9	81
Controls	9	5	55	4	45	3	33	6	67

It can be seen from Table 4 that the syphilitic child under 10 years is one sixth (9 per cent. against 55 per cent.) as likely to have a free acidity above the normal average as the control and is approximately twice (91 per cent. against 45 per cent.) as likely to have a lower acidity value than the normal. As regards total acidity, he is approximately one half (18 per cent. against 33 per cent.) as likely to have a higher value and approximately one fifth again as likely to have a lower value than the control.

Table 5.—*Comparison of Acidity Values in Syphilitic Children and Controls Above 10 Years*

		Free Acidity				Total Acidity			
		Above		Below		Above		Below	
	Number	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
Syphilitic	10	0	0	10	100	0	0	10	100
Controls	8	3	37	5	63	3	37	5	63

The comparison in Table 5 indicates that the syphilitic child over 10 years tends throughout to have acidity values lower than the control, with no tendency to manifest higher individual values. This phenomenon agrees with Neugebauer's belief that lower values than normal prevail, and that the finding of individual hyperacidity values is merely the precursor to a drop in those values.

COMMENT

The findings of Neugebauer are substantiated in these observations in children. Viewed from all angles, the data demonstrate lowered acidity in the gastric contents of syphilitic children. This is apparent from a comparison of the average values of a group of controls and a group of children with syphilis. It is further borne out in separating the individual cases of both groups and comparing the relative proportions of cases above and below the normal average of each group. The same facts are disclosed when the series is split into age groups.

Separation of individual cases in the manner described more accurately and completely expresses the facts. Data concerning conditions in the unknown must be related in terms of the known. Neugebauer's conclusion, for instance, that 80 per cent. of syphilitic persons show hypo-acidity is misleading, because it implies that hypo-acidity is itself abnormal, and that individuals otherwise normal do not manifest hypo-acidity, i. e., values below the normal average range. By virtue of the definition of average, there must be a certain proportion of normal individuals with values above the average and a certain proportion below this average. Therefore, Neugebauer's 80 per cent. must be related to the percentage of normal individuals who show hypo-acidity. In this way a conclusion may be drawn which more accurately describes the greater tendency of the syphilitic individual to exhibit low gastric acidity. This plan has been followed in the analysis of our data.

The term approximately is used advisedly throughout the discussion, first, because the proportions are expressed in round numbers for convenience, and, secondly, the results in a small number of cases, although carefully controlled, are approximate for the situation in general. However, greater accuracy attaches in this instance, because the results of analysis markedly and consistently indicate relative hypo-acidity.

The same conclusions were arrived at by the use of Brüning's normal acidity tables for age groups of children, but we established controls of our own which would more accurately express similar factors such as class, race, geography, and the diet of the children, and the personal equation of the observer.

Clinical Notes, Suggestions and New Instruments

CEREBELLAR ABSCESS: OPERATION AND RECOVERY *

Henry M. Goodyear, M.D., Cincinnati

A man, aged 26, whom I saw, May 10, 1925, gave the following history relative to his ear and brain complication: Eight weeks prior to this time he complained of an acute sore throat followed by severe pain in the left ear. Twenty-four hours later the drum ruptured spontaneously, and a continuous pus discharge followed, without mastoid tenderness at any time. The patient continued about his work as usual. However, there occurred, six weeks after the onset and two weeks before I saw him, a sudden significant attack of severe pain over the left side of the head, accompanied by nausea and vomiting. After thirty-six hours, these symptoms subsided and the patient felt well, played golf and did his work as usual, until four days before I saw him, when he again developed a severe pain over the left occipital region, accompanied by marked nausea, vomiting and dizziness.

When I saw the patient, he was lying on his right side with the head flexed. He was afraid to move for fear of exciting severe attacks of pain over the left occipital region, with increased vertigo and vomiting. He looked thin, pale and unusually ill. He was mentally clear. There was rotary quick nystagmus to the right, the past pointing was normal, and no weakness or ataxia could be discerned. The knee-jerks, Babinski and other reflexes appeared to be normal. There was no pain in the ear or about the mastoid. There was some slight pain over the left temporal area and constant pain over the left occipital area, with intermittent excruciating attacks.

A thick pus discharge was coming through a perforation in the posterior lower quadrant of the left tympanic membrane. There was no sagging of the canal wall, or evidence of granulations or polypi noted, nor was there any mastoid tenderness. The hearing was not completely lost. At no time in the course of the illness had there been any chills or chilly sensations or temperature over 100 F.

A history of scarlet fever and a discharging ear for several weeks, when the patient was a child, suggested an old sclerotic mastoid.

The heart and lungs were normal, and I advised immediate operation, as there was already evidence of extension beyond the mastoid area.

When the left mastoid was opened, it was found to be almost completely sclerosed, with no evidence of pus until the sinus was uncovered, when a pulsating flow of pus occurred.

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* Read before the Cincinnati Academy of Medicine, Nov. 23, 1925.

A large abscess was uncovered over the lateral sinus and downward and posteriorly over the cerebellum. The granulations over the sinus were from one-half to three-fourths inch (from 1 to 1.8 cm) thick. These were not disturbed but uncovered widely. The antrum was widely opened and the posterior bony angle between the middle fossae and sinus was completely removed, exposing granulations on the dura.

A cigaret drain was extended to the antrum, and the upper part of the wound was closed.

The patient showed immediate improvement, and the nausea and vertigo ceased. This improvement continued for about one week, when the symptoms preceding the operation recurred. Again the patient was unable to retain food, or lie other than on his right side without increasing the vertigo and nausea.

There was no abnormal past pointing or weakness noted in the left extremities. The hearing was decreased but present, and no abnormal reflexes were detected.

The patient was 150 miles from Cincinnati, and it was necessary to transport him on a stretcher by train so that I might have him under closer observation.

The temperature did not rise above 99; the white blood count was 9,000, with 85 per cent polymorphonuclears. The urine was normal.

Dr. Stanberry reported the eye grounds to be normal.

Dr. Kiely found no abnormal reflexes at this time. We decided not to do a spinal puncture, as the patient was already very uncomfortable and there was sufficient evidence for exploration.

The old wound was opened under local anesthesia. Some pus was found extradurally in the posterior mastoid angle, but there was no evidence of dural destruction. The occipital pain immediately ceased, and the patient said he felt greatly relieved. Reopening the old wound probably had the effect of a decompression.

The nausea and vomiting were relieved for several days, and then recurred with drowsiness and some weakness, and ataxia of the left arm and leg. The temperature was 100 and the pulse 120. There was also evident at this time a paralysis of the external rectus muscle of the left eye.

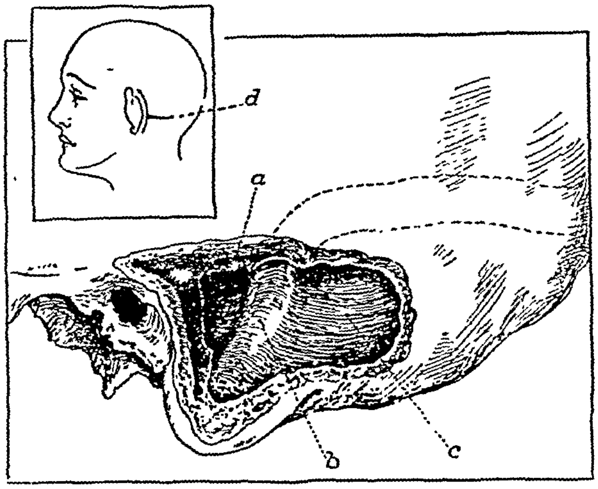

Fig. 1.—Exposure of dura covering cerebellum: *d*, supplementary skin incision for adequate exposure of bone; *a*, cerebellar region in front of sigmoid sinus; *b*, sigmoid sinus; *c*, cerebellar region behind the sigmoid sinus. (Modified after Kerrison.)

Under local anesthesia, I uncovered the cerebellum below and posterior to the lateral sinus (fig. 1). When the dura was opened there was some bulging of the cerebellum, but no evidence of adhesions or inflammation. The subarachnoid space was packed off with iodoform gauze, and a blunt brain knife was inserted backward and medially into the cerebellum for a distance of three-fourths inch. There was a welling of pus. A perforated rubber tube was inserted and sewed to the scalp after the method of Elsberg (fig. 2).

There was no marked improvement after the operation, and the pulsations of the brain had a tendency to pump the tube out. On the sixth day after inserting the tube, and after the patient had been irrational for several days, I removed this tube, which had shown no drainage of pus, and with a grooved director entered the abscess again. More than an ounce (30 cc.) of pus escaped, three fourths of which was drained into a measuring glass. The director seemed to fall into a large cavity which was very deep. In fact, a rubber tube inserted for drainage was buried by actual measurement to a point 2⅜ inches (6 cm.) inside the dura.

The tube was kept in place by means of adhesive tape, and gradually removed after ten days, and completely removed on the twenty-third day after the dura was opened.

Fig. 2.—Drainage tube sutured into place, and wound closed.

The patient became rational several hours after the second drainage, and from that time forward the recovery was uneventful.

At the present time, the patient appears to be perfectly well. The hearing is good, and there is no ataxia or disturbance of reflex.

Culture from the abscess was negative. However, no attempt was made to take cultures under tension or anaerobic conditions.

I observed this patient rather painstakingly for past pointing to the left, but there was no abnormal pointing at any time.

In cases in which past pointing to the side of the cerebellar abscess has been observed, the abscess has usually been reached and found adjacent to the area anterior to the sigmoid sinus. The absence of this phenomenon and the finding of an epidural abscess at the primary operation over the cerebellum posterior to the sigmoid sinus led me to explore the cerebellum posterior to this vessel.

556 Doctors Building.

A RACK FOR STOMACH TUBES

John L. Kantor, M.D., New York

Every one knows how perishable stomach tubes are under ordinary conditions of usage in hospital and dispensary, if not in private, practice. They are often kept in basins and curled to save space. As a result, the tubes soon tend to assume the shape of the containing vessel, break and have to be discarded. The same condition applies to duodenal and intestinal tubes.

The rack here described provides a convenient method for the storage of stomach and duodenal tubes. It consists essentially of one or more rows of dowel-pins projecting down from a board. This board should be at least 5 feet from the ground, so as to allow room for the longest tubes to hang free. The dowels, which are tapered at their free ends, vary in diameter from three-eighth to one-eighth inch, depending on the size of the rubber tubing to be suspended from them, and are about 2 inches long. The tubes are kept in place by being slipped over the proper sized dowels, so that they fit snugly. The entire apparatus, consisting of rack and tubes, may be attached to a wall or be built into a closet, if preferred.

ADVANTAGES OF RACK

The advantages of this method of storage are obvious. With the tubes hanging from their respective pins, drainage is free and evaporation (drying) rapid. There is no curling and no wearing of one side of the tube more than the other, so that the life of the rubber is prolonged immensely. Some tubes have been in daily use up to four years. The rack may be employed for the storage of rubber tubing (catheters, enema tubes, rectal tubes, stock tubing) needed for almost any clinical or laboratory purpose.

145 West Eighty-Sixth Street.

Special Articles

THE COUNCIL ON PHYSICAL THERAPY *

MORRIS FISHBEIN, M.D.
Editor, The Journal of the American Medical Association
CHICAGO

The editor's occupation affords him opportunity to display either broad and comprehensive ignorance or erudite knowledge of many topics before audiences composed of specialists in various fields. Following his glittering generalizations he is likely to become the recipient of anathema and vituperation for his disagreements with long-held opinions. Obviously, the knowledge of physical therapy which forms the basis of the considerations here presented is not derived from personal observation of the devices used in physical therapy, from an intimate study of their effects on animals or on patients, or even from their trial on a physical constitution inured to punishment by the trials of numerous tooth pastes, breakfast foods, condensed, dried and powdered milks, or other samples conferred on editors by earnest manufacturers and a progressive advertising department. Such statements as are here made public result from the reading of innumerable manuscripts submitted by aspirants for fame in the field of physical therapy; from the reviewing of a considerable number of major opuses that have emanated from the pens of physical therapeutic scribes—some obviously, some possibly, some ostensibly, and some not likely in the employ of concerns producing apparatus; from conferences with many specialists in this growing field, and, finally, from an attempt to apply to the assembled information what is known as editorial judgment—a thing sometimes called by cynics the result of a disordered digestion. Indeed, if I may be pardoned the parody, and if I may disavow any intention to dispose of physical therapy in a premature postmortem, I may make my apology for discussing this subject in much the same words that Mark Antony used in his address over the body of dead Caesar:

> I come not, friends, to steal away your hearts,
> I am no orator, as Brutus is;
> But, as you know me all, a plain, blunt man
> That love my friend; and that they know full well
> That gave me public leave to speak of him;
> For I have neither wit, nor words, nor worth,
> Action, nor utterance, nor the power of speech
> To stir men's blood; I only speak right on.
> I tell you that *which you yourselves do know.*

THE CREATION OF THE COUNCIL

When Dr. George H. Simmons assumed editorial control of The Journal of the American Medical Association a quarter of a century ago, he found its advertising pages filled with the claims of drug manufacturers for therapeutic combinations that put to blush the formulas of the dreck-apotheke of the middle ages. And that situation was not only tolerated by the medical profession of that time but actually encouraged by the majority of medical periodicals, because they derived from it their pecuniary support. The account of the warfare led by Dr. Simmons, Dr. Frank Billings and others against this situation is an inspiring one. The establishment of the Council on Pharmacy and Chemistry was the most significant move in that battle. It was a stimulus to scientific pharmacologic investigation in universities and to creation of scientific staffs in industrial concerns.

The Council on Pharmacy and Chemistry was inaugurated to oppose the deluge of misinformation concerning drugs coming from unrecognized and even unidentifiable sources. For more than twenty years the Council has fought, and in many instances the fight has been successful. But none of us would assert that the Council on Pharmacy and Chemistry has succeeded in stamping out fraud or imposition in drug therapy. Such a preposterous statement would no doubt be met with raucous laughter coming first from the very physicians who have failed to support the Council's efforts and also from the manufacturers who could blithefully produce the sales records of unaccepted products. The Council has, however, kept the faith both with itself and with the organization that created it. The Council has listed products of merit and has condemned those based on fallacy. Physicians have been provided with a guide book which they may consult when they feel that the unbiased opinions of leaders in the field of chemistry, medicine and drug therapy are a better index to the truth than are the simple and credulous beliefs of unthinking practitioners of medicine, and the highly colored, flamboyant invitations to purchase of enthusiastic manufacturers. Fortunately, there exist today numerous manufacturing houses in the field of drug therapy which have felt that good business, not to mention good commercial ethics, demands complete support of the Council on Pharmacy and Chemistry.

The record of the Council was no doubt the inspiration that moved Dr. Joseph F. Smith of Wisconsin to bring before the House of Delegates of the American Medical Association at the annual session in Atlantic City in May, 1925, a resolution urging the Board of Trustees to establish a Council on Physical Therapy. In the clauses preceding the resolution, he defined the chaotic situation, dominated by commercialism, that exists today. The Board of Trustees, at its meeting in September, made the first appointments to the Council, and in a preliminary meeting certain committees have been established to take up the work.

PROBLEMS OF ORGANIZATION

For several reasons the Council on Physical Therapy will find its problems much easier of solution than did the Council on Pharmacy and Chemistry. One of the most important reasons is the existence of the American Electrotherapeutic Association. Since the time when it first became apparent that there is wisdom in counsel and in the assembling of many minds, men have met not only for the pleasure that comes with gregariousness but also for mutual defense and support. So well is this principle recognized that the development of any new field in medicine is promptly followed by the organization of some body for its investigation and promotion. Such titles as the American Association of Peroral Endoscopists, the Pittsburgh Slit Lamp Association and the American Association of Intrathoracic Surgeons are indications of the detail to which organization may proceed. It was no doubt this striving for the truth that urged the initial development of the American Electrotherapeutic Association. But let us not forget also that shrewd promoters have been among the first to realize the benefits of assembled minds and unified action. The astute Albert Abrams was the organizer of a half-dozen medical societies, each for the promotion of a peculiar system of therapy which he unloaded on an unsuspecting and long suffering profession. The American Association for Medico-Physical Research, which today devotes itself to a multitude of vagaries, including those of Abrams, has already opposed bitterly the formation of the Council on Physical Therapy of the American Medical Association.

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* Read before the American Electrotherapeutic Association, New York, Jan. 6, 1926.

In the development of the American Electro-Therapeutic Association, as in the opening of every new field, a few pioneers were active. Reversing here our Shakespearian Mark Antony, let us say that the good that they have done will live after them. As with pioneers in every field, it is easy to forgive them much, for they knew not always what they did. The pioneer is, in fact, a peculiar psychologic type. His very name indicates that he is one who presses forward regardless of obstacles. In his advance he is likely to disregard factors that those who follow him must recognize; his oversights are corrected with a loving kindness that in no way reflects on the spirit with which he moved.

The advance of electrotherapeutics under the guidance of its pioneers was an enthusiastic but bitter warfare against a stubborn and conservative medical profession. The introduction of unknown forces into the treatment of disease meant that physicians untrained in the basic sciences on which a comprehension of these forces depends must begin anew their period of infancy and education, or yield their patients and their livelihood to those better informed. So far as electrotherapy is concerned, physicians have felt, no doubt with reason, that they must be shown. Whether this fortunate scientific skepticism was founded on a scientific frame of mind, or was merely an obstinate resistance to what was apparently an incomprehensible phase of medical treatment, is a matter for conjecture. In any event, the inspired pioneers of electrotherapy have had little patience with opposition, no doubt feeling that it was not based on comprehensive understanding of the things which to them seemed as simple as the child's alphabet. Let us, with editorial judgment, take the middle ground. No doubt the position of the medical profession regarding physical therapy has been unreasoning and blind; but just as certainly the enthusiasms of the pioneers were a beautiful manifestation of the credulous will-to-believe. Science demands controlled observations; it requires due precautions against the will-to-believe, definite allowance for the *vis medicatrix naturae,* and simple admission that there is much that we do not know. The repetition of these aphorisms may sound as infantile as the squeaky "mamma" of the Christmas doll; but, alas, how necessary the repetition seems to be! When the allowances are all made, it seems that more must be granted at this time to those who opposed than to those who proposed, in the field of electrotherapy.

With the passing of time, the pioneers began to adapt themselves for the most part to the knowledge that medicine began to acquire from the fundamental sciences. The discoveries in chemistry, in physics, in biology, in physiology and in pathology began to make themselves felt in the physical therapeutic field. If one scans the reports made before this society through the passing years, the names of masters of these related fields will be found in the records. Always apparent is the intent to eliminate the unscientific, to determine the actual physical basis of apparatus and of methods, to detect physiologic and pathologic changes such as may have occurred. The annual reports are a mine of information to those who are interested in tracing the development of electric therapeutics as a science.

The work of the American Electrotherapeutic Association has been in large measure responsible perhaps for the gradually changing attitude of the medical profession toward the use of electrical devices. Confronted by the mystery of the radio, by the astounding fact that photographs may be transmitted by electrical means, by talking movies and by similar phenomena of our modern luxurious life, it is not strange that any one is ready to believe anything. Where, then, is the physician to turn for the truth? Learned perhaps by bitter experience, or conversant with the work of the Council on Pharmacy and Chemistry, many physicians have turned to organized medicine, as represented by the American Medical Association, for advice in this field. Their questions, coming to the headquarters office in increasing numbers each day, indicate a readiness to be taught, provided they may have teachers in whom their confidence will not be misplaced.

THE TEACHERS OF PHYSICAL THERAPY

Education in physical therapy today may be had through the available literature, represented by advertisements, pamphlets, articles in periodicals, and textbooks; through courses in physical therapy given by well established schools and hospitals, by the paid representatives of manufacturing concerns, and by impromptu teachers with no credentials other than a profound belief in their own erudition; through the suave representations of detail men who know well how to befuddle the brain of the busy practitioner with a nomenclature fit for nothing so much as the construction of crossword puzzles. Indeed, like all the literature of medicine, of art, of science, of religion and even of literature itself today, that of physical therapy may be divided into two main groups—the commercial literature and the literature of science. The groups infringe on one another to the extent that the literature of commerce is scientific and that the literature of science is commercial. Even a moron might follow easily the path of commerce or of science; but the unenlightened physician who wishes to tread the devious path between will need a guide to prevent him from straying into blind alleys and treacherous by-paths, and, indeed, from losing his way altogether.

At the meeting of the Modern Language Association held in Chicago recently, William McFee suggested that the American literature of the future would perhaps be the literature of commerce rather than the literature of science and of art. Since commercial organizations demand and pay for the best available literary talent, the magazine of the future may well consist of a central section of advertising written by masters in the literary field, surrounded by the rather dull pages of fiction produced by apprentices in the trade. Of course, even under the present arrangement it is hard to tell where the fiction ends and where the advertising begins in many periodicals. The cautious purchaser never forgets that the aphorism "Whose bread I eat, his song I sing" represents the psychologic observation of centuries.

The literature of commerce is a literature of affirmation; search as one may through page on page of circular, bulletin or advertising pamphlet, the statement of negation is a rarity. The literature is inspirational, leading inevitably to the signature on the dotted line. Even the most stupid of readers must already have noted the application to the field of electrotherapy of the fundamental psychologic fact discovered perhaps by Messrs. Macfadden and Hearst and widely exploited in their periodicals. Most of the illustrations used in the folders on physical therapy, observant readers have pointed out, represent the application of physical therapeutic methods, not to unfortunate soldiers, coalminers and teamsters, but to beautiful damsels, apparently in the pink of health, who have unveiled quite excessive portions of their intimate anatomy for the local application of a one-square inch electrode or the application otherwise of the healing heat or invisible ray.

The literature of electrotherapeutics, as I have intimated, comes sometimes frankly with the mark of commerce stamped on its pages; sometimes camouflaged behind the name of a physician who obviously is in the employ of, or has most certainly been influenced by, the concern devoted to the sale of the particular device. Frequently it is nevertheless the earnest effort of a sincere scientist to record his honest observations for the good of his fellow physicians and for the benefit of mankind. Actually, the field of physical therapy is not nearly so bestrewn with the flimsy invitations of verbose commercial barkers as was the field of drug therapy at its worst some twenty-five years ago. There are, and have been, in the electric manufacturing field producers who have seen that permanent business demanded soundness from the start. They have proceeded cautiously in the issuing of advertising matter. They have attempted to state the facts concerning their devices and left it to scientific observation by clinicians to provide the claims. These firms have been among the first to welcome the establishment of the Council on Physical Therapy of the American Medical Association, for they have felt that its establishment meant to them support in the advancement of a sound industry. On the other hand, some manufacturing concerns have champed impatiently at the delay in adoption of their devices by cautious members of the medical profession. These business men, not content with the scientific observations made in well controlled laboratories and clinics, have gone afield for the provision of their material, or have purchased the full time of easily credulous and perhaps not too meticulously ethical observers to supply claims for their machinery. The statement is a broad one, but it will be supported in due time by documentary evidence.

An investigation of the curriculums of medical colleges indicates that but few are ready to give courses in this branch of medical treatment. A survey of the hospitals of our country finds few of them adequately equipped with physical therapeutic apparatus; many are supplied with obsolete and inefficient, perhaps sadly rusted and degenerated, types; still others, equipped in the heyday of some lax political appropriation, present whole edifices devoted to intricate apparatus, both good and bad, which lie idle because of the lack of competent men and women to manipulate them. In this situation the practitioner turns naturally to possible sources of information.

The physician is informed by one concern or another that he may secure the privilege of instruction from an expert who is endowed by the manufacturing concern which promotes him with nothing short of celestial wisdom. The courses are offered free or for nominal sums, but are nevertheless commercial courses. Try as it may, the manufacturing concern which endeavors to promote the sale of its devices by the direct teaching of the physician cannot separate its teacher from the charge of commercialism. That teacher may be honest, his intentions may be of the best, he may even attempt to lean backward to avoid the taint of commercialism; but, as the poet eulogized:

> You may break, you may shatter the vase if you will,
> But the scent of the roses [?] will hang round it still.

Contrast with the flaming promulgations of commerce the modest announcement of the course in physical therapy offered by Columbia University, which I select merely as a local example. Here is no blatant shouting of unusual virtues; merely the statement that the course has been planned for licensed practitioners of medicine only, that it includes six weeks of daily clinical work together with suitable lectures, and that it is offered to provide a working knowledge of the subject. Here is no announcement that physical therapy will bring to the practitioner taking the course extraordinary and increasing fees; no statement that the use of these electrical devices will win for him such practice as is now secured by self-advertising cultists; no inducement on the grounds that the flashy apparatus, issuing dazzling sparks and quivering rays, will attract to his books the misguided morons who are unable to distinguish between sense and sensibility. Here is the contrast between science and charlatanism.

The Council on Physical Therapy will hardly be called on to define suitable educational procedures or to list competent teachers in physical therapy. Medical education is the purview of another council of the American Medical Association. But the Council on Pharmacy and Chemistry, working with the Council on Medical Education and Hospitals, has done much to promote sound education in drug therapy. It has established its list of useful drugs; it has provided medical students with the list of New and Nonofficial Remedies approved by the Council; it has secured the cooperation of medical schools in the promotion of its work; it has made grants for research in established laboratories to settle matters of doubt; it has published symposiums on biologic therapies, on glandular therapy, and on similar special topics in its field. And already the Council on Physical Therapy has indicated a willingness to undertake similar plans in its field. The Council realizes that education is necessary not only for the practitioner but more particularly for the students of today who will be the practitioners of tomorrow.

TEXTBOOKS OF ELECTROTHERAPY

Again and again physicians have addressed letters to the headquarters office of the American Medical Association asking simple questions as to the merits of individual devices, inquiring regarding the most fundamental facts of physical knowledge, and in many instances merely requesting direction to sound literature which they might consult for information on some subject. Unfortunately the textbooks, like the science itself, are undergoing a process of development which makes difficult dependence on any one of them. The most conservative find it necessary to limit so greatly the field of electrotherapeutics, and even of light therapy apart from therapeutics, that the practitioner is likely to consider its study, and most certainly investment in apparatus, little worth while. On the other hand, the enthusiastic outbursts in volumes by accepted leaders in this field are a strain on the credulity of the most mellow of minds. One author considers that "one of the most effective uses of electricity is the relief, and at times the cure, of all degrees of descension of the uterus, except possible complete procidentia." "It is probable," he asserts, "that every puerperal woman would be the better for a course of nongalvanic rhythmic currents after cessation of the lochia." He advises "cathode depigmentation" for the removal of freckles; electric ionization for the cure of salpingitis, and, in fact, finds some use for electricity in every possible physical or mental condition that afflicts the human body. Actually, he recommends the treatment of ectopic gestation by electrocution of the fetus before the fourth month, and the use of more moderate currents afterward to promote its absorption. He wisely suggests that in the meantime the patient should be at absolute rest in bed, with the constant attendance of a nurse.

And yet these statements of presumably scientific writers on electric therapy are mild indeed compared with the lucubrations of the commercial wielders of the pen who are inhibited by no scientific doubts whatever in their development of literature that will sell the goods. Speaking of the incandescent lamp, one of them says:

> When you use a thermotherapeutic light, you invoke nature's strongest force, the most permanent therapeutic power.

Another statement says of diathermy:

> No physician's office, no hospital or sanitarium is complete without some good physical therapy equipment—particularly a diathermy apparatus of the portable or semiportable type. Such a machine is a very decided requisite if modern methods of medicine and surgery are to be employed.

Just how much more requisite a "decided requisite" or a "very decided requisite" may be than something that is just "requisite" deponent sayeth not.

Another manufacturer presents to the medical profession a cabinet lined with mirrors and incandescent electric lights. This, be it understood, is the "inductive metabolizing method." Of this it is said:

> The ——— Inductive Metabolizing method gives to the world one of the greatest, if not the greatest, means of rejuvenation of the human organism known to medicine, but the part that is most interesting about this modality is that of its synergetic action with all the recognized methods of rejuvenation now in use—such as gland therapy, radioactive drinking water, baths, etc., as the results obtained by their use, when accompanied by the Inductive Metabolizing treatments, are increased tenfold.

And finally, for it would be possible to multiply these examples interminably, hearken to this section on "Resuscitated Sunlight":

> We are all familiar with the marvelous vitalizing, beautifying and regenerating power of Sunlight. We have seen the earth, brown and sear in early Springtime, quicken to life and beauty; the tiny buds burst their prison cells, and develop into flower and fruitage; the fetid odors of putrescence disappear—and all, under this magic influence of the sun's rays. Yes, more; we have watched with keenest interest the red blood come into the veins, sparkle into the eye and vigor into the limb of the anemic and invalid, through the stimulating effects of the "Sun Bath." But somehow, we limit the Electric Light to its luminous qualities, forgetful that in it we have real "bottled sunshine" under our absolute control, ready for application when desired and with the widest range of adaptation.
>
> As the physicist has learned, the Electric Light is identical with Sunlight; in fact, it is Sunlight resuscitated from the energy long stored in the lumps of coal used as fuel. This latent energy in the coal, liberated in the furnace and transformed in the dynamo, is flashed forth again in radiance from the electric arc, or incandescent filament, or its interrupted mission of service to the world. In other words, that subtle, force—that potent silent process that tints the petals of the lilac and the lily, that scents the rose and the jasmine, that flavors the ripening fruit in the orchard—is one and the same of Nature's forces, whether at work in the flower garden, on the sands of the seashore, or in the Light Baths.

It is presumed that the gentleman who wrote this statement is now more gainfully employed selling lots in Florida.

PERIODICAL LITERATURE ON ELECTROTHERAPEUTICS

If the physician turns to the periodical literature on the subject—for it is this literature that should mark the progress of the science week by week and month by month—he finds a strange paucity of articles available for his information. Frankly, the official periodical of the American Electrotherapeutic Association has only recently begun to resemble in both advertising and editorial content what a scientific periodical ought to be. Apparently, in previous years it was the custom to print all the articles read at the regular meetings; editors were not permitted to, or did not, exercise critical judgment, and the reader was left to his own devices in distinguishing between that which represented uncritical hypothesis and that which represented established fact. Today the official periodical is the one journal devoted exclusively to this field that is regularly indexed and abstracted in The Journal of the American Medical Association. The inclusion, which is recent, may be taken as recognition of the successful attempt of your officers and editors to put the periodical on a scientific basis.

The Journal has thus far published but few articles on electric therapeutics, not, however, because of any lack of articles submitted. Consider, for example, the protest of a medical electrotherapist whose paper was returned on the grounds that his claims were exuberant:

> I have treated some 32,000 times with ultraviolet equipment. I have every good book on ultraviolet and physical therapy that I know about. I keep up on the current literature. I have had ultraviolet in my home for five years. I study and typewrite naked under ultraviolet at home, often five nights a week, often three hours at a time. I have taken thousands of hours of ultraviolet on my own body. I believe that I have cured myself of pulmonary tuberculosis and parasynusitis with ultraviolet.

Among the statements made in the paper that was returned was the claim that persons living in California and in Florida were finer specimens of manhood than could be found anywhere else in the United States, because of the large amount of ultraviolet light which they secured. In support of this statement was the following:

> I have studied draft-board reports. It does show that the best specimens of American manhood comes from the West; that some Western states filled the first three drafts with

volunteers and that no eastern state filled any with volunteers I believe President Wilson stopped volunteering so that the West would not show the East up.

Who of us fails to greet such statements with well merited scorn and laughter? But how many assertions have been made in papers presented before the scientific sessions of this organization that are grounded in statistical proof and *a priori* reasoning no better than that here offered for derision.

MUSHROOM SCHOOLS AND UNQUALIFIED PRACTITIONERS

The physician who is anxious to perfect himself in the fundamentals of physical therapy, or even in the practical use of the apparatus, is confronted by a troublesome situation. As has been intimated, the schools of medicine and the postgraduate schools offer but few courses, and those not continuously. Moreover, mushroom schools have sprung up here and there to offer such courses to any aspirant, be he chiropractor, osteopath, cosmetician, chiropodist, barber, farmhand or blacksmith. Who has defined the point at which the work of the physical therapy aide or technician ends or commences? The ignorant cultist, licensed by a too-complaisant state to practice some single system of diagnosis and treatment, finds his patients seldom inclined to inquire whether or not his fundamental training warrants the use of the potent electrical devices with which he may have equipped himself. Indeed, most often this course of study has embraced some hours with the detail man or demonstrator and a cursory study of the book of directions, if he happens to be able to read. Even the "Naturopath" equips himself with artificial sunlight against the day when the clouds obscure the sky, although information has not yet been received that he has secured artificial grass and bottled dew for his nightgown-clad hypochondriacs to walk in while the artificial sun may shine.

The medical practice acts of our individual states make strange allowances for all sorts of unusual encroachments on the practice of medicine. Legislators seem not yet to have realized that the ability to diagnose disease according to the facts of modern scientific medicine is, and legally should be, an absolute prerequisite to any sort of treatment. The nurse, the technician, the aide, or whatever high-sounding title may be conferred on a medical assistant, gains confidence with time and soon wishes to depart from the sheltering wing of the physician whom she may assist, to establish herself in her self-constituted profession of physical therapist. In several states the new laws regulating the practice of cosmetology specifically exempt the other new profession of electrology so far as concerns the removal of superfluous hair, moles, warts or excrescences from the skin. There is need for some body, with all the power and authority of organized medicine in its support, to set forth above everything else the dangers of the ignorant employment of electrical devices.

THE WORK OF THE COUNCIL

The Council on Physical Therapy, as has been intimated, is confronted by problems not nearly so difficult as those which confronted the Council on Pharmacy and Chemistry in many of their phases. After all, the possible devices to be studied are developed slowly and are limited by definite physical and structural limitations. Moreover, the new council has in the old an example as to procedure, which will permit the avoidance of the fumbling, experimental steps, the trial and error methods, that were necessary in the development of the Council on Pharmacy and Chemistry. The plans which the Council outlined in its preliminary meeting included the publication of a series of articles defining the present status of actual knowledge in this field. These articles are to be prepared through cooperation between the members of the Council, the editorial staff of The Journal, and all the experts in the field of physical therapy on whom the Council hopes it may call with success for contributions. Effort will be made to edit and prepare this material in such form that the finally published statements will present that which is established by undoubted scientific evidence.

Those who are proficient in the physical side of electric therapy realize that it is relatively simple to determine whether or not electrotherapeutic apparatus is constructed according to the specifications set forth by its manufacturers, as to whether or not the various devices will deliver the amounts and the kinds of current claimed for them in the literature. The great difficulty will inevitably arise in the interpretation of the clinical evidence. To this interpretation the Council will apply itself particularly, endeavoring, in the absence of properly controlled observations, to see that they are made in well conducted departments of physical therapy in established schools and hospitals. And physicians may be assured that the filtrate of truth, passing through this filter of scientific judgment, will be a clear and sparkling fluid, free from noxious matter and visible dirt, almost as potent perhaps as the claims made for waters in jars containing radium ore or as that in swimming pools treated with the ultraviolet ray. What a contrast that would be to the muddy waters of doubtful knowledge in which the practicing physician swims today!

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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CHICAGO

(Continued from page 199)

4. *Antiseptic Lotions.*—In the presence of infection, the fluid employed to keep the dressing moist might, with advantage, be an antiseptic lotion. Among these one should distinguish between disinfectant and bacteriostatic applications.

Examples of disinfectant lotions are the solutions employed by the surgeon for disinfection of the skin, such as mercuric chloride, 1 : 1,000, or 5 per cent phenol. A good example of a disinfectant lotion employed to prevent dissemination of infection in the treatment of acne or of furunculosis is one containing mercuric chloride, 1 : 1,000, in alcohol, to which 25 per cent of ether may be added for the purpose of removing fat, thus making the lotion detergent and more penetrating. It may be noted, in passing, that one must not employ sulphur internally or externally in conjunction or alternation with such a lotion, as otherwise the pores of the skin will become filled with black dots of mercuric sulphide. Such a lotion must not be applied to a raw or excoriated surface, on which it would be decidedly irritating and from which poisoning might occur if the application was at all extensive.

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* This is the fourth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

The now official surgical solution of chlorinated soda (modified Dakin's solution), which was developed during the war for the dressing of infected wounds, is a truly disinfectant solution. Whether or not it can accomplish the miracle, as Almroth Wright termed it, of "disinfection of an infected wound" depends, in the first place, on a definition, and secondly on the time and manner in which the solution is used. No one can doubt that, as long as micro-organisms are on the surface of a wound and before they have invaded the tissue, this solution can destroy the contaminating organisms: in other words, we can disinfect a contaminated wound, provided we convert it into a surface and permit the solution sufficiently thorough and prolonged contact. There can also be no doubt that, when organisms have invaded the tissue—and true infection implies successful invasion—no disinfectant can reach them without also killing the tissue. Chlorine is the ideal disinfectant for contaminated wounds, because it is not as poisonous as any other equally powerful disinfectant; for the end-result of the reaction is the harmless chloride ion. To accomplish this much, a most exacting technic is required. The solution must not contain more than 0.48 per cent of available chlorine, or else it is too irritative, and not less than 0.45 per cent, or else it is quite useless. Even though the solution is of the proper strength, it soon loses it when in contact with the tissue; hence, frequent renewal—once every two hours—is necessary. The skin does not tolerate this solution, even though its strength is within the proper limits, for any length of time without irritation. Hence, the skin surrounding the wound must be protected by petrolatum. The irritant action of the solution may, however, be of value in improving the reaction of the tissues against bacterial invasion.

The best example of a bacteriostatic lotion is a saturated solution of boric acid. It has the advantage of being practically harmless to the tissues and is still capable of inhibiting the proliferation of bacteria. This keeps dressings saturated with boric acid solution from becoming offensive and the discharge absorbed by such dressings from serving as a culture medium for pathogenic micro-organisms. In the treatment of infection of or near the surface, hot boric acid dressings are deservedly in extensive use. The heat is relied on to produce hyperemia with its reparative, antibacterial, resorptive and analgesic actions. The more desirable it is to stimulate reaction, the more necessary is it to have and keep the compresses hot. This is accomplished by moistening the gauze with boiling solution, which is wrung out thoroughly before applying the compress to the part. The wringing is usually done by placing the dry sterile gauze in a sterile towel, which is immersed in the boiling solution, leaving the two ends of the towel dry, and wringing out the excess moisture by means of the dry ends of the towel. When the wringing is well done, one cannot get the dressing too hot. The patient may complain about its feeling too hot; but it will do no harm, provided a moist rather than a wet compress has been applied. Another reason why the compress should be moist rather than wet is that such application absorbs better—better even than a dry dressing—just as a sponge that has been moistened and squeezed out absorbs better than a dry sponge. To keep the dressing hot, heat loss is antagonized in all possible ways. The dressing is first covered with waterproof material, such as paraffin paper, to antagonize heat loss by evaporation. This is then covered with a thick layer of cotton or other poor heat conductor; and the whole is kept in place with a convenient bandage. Obviously, each succeeding layer of the hot boric dressing is made larger than the one below it. Even when applied with all these precautions, the dressing does not remain hot for more than an hour or two, when it should be replaced by a fresh one. The hot boric dressing frequently acts like magic in putting a stop to spreading inflammation, provided it is applied to take in a large area of healthy tissue surrounding the lesion. The latter is thus excited to exert a vigorous and frequently successful resistance against the invading micro-organisms. Once the lesion has become well circumscribed, the battle is won, and the compresses need not be changed so frequently; but, when the compresses are applied to a discharging surface, they must be changed often enough to keep them moist. If they are permitted to dry, they fail in their absorptive function and become adherent to the surface, with all the previously described disadvantages of "sticking" dressings.

5. *Irritative or Stimulating Lotions.*—It is a fundamental therapeutic principle to employ soothing treatment in acute inflammation and stimulating (irritative) treatment in chronic inflammation, the degree of irritative action being in proportion to the chronicity and indolence of the inflammatory process. In the application of this principle in dermatology, preference is generally shown for reducing bodies which are believed to be keratoplastic—to have a greater tendency to stimulate proliferation of epidermal cells than most other irritants. This is why agents such as sulphur, tar and its derivatives, chrysarobin and trinitrophenol, are generally preferred to a host of other possible irritants and antiseptics.

For a case of chronic dermatitis, therefore, we might prescribe coal tar solution (N. F.), which contains 20 per cent of coal tar and the soluble principles of quillaja (10 per cent) in alcohol. This solution is diluted with from 10 to 50 parts of water, for use on the skin, though in very indolent conditions the undiluted solution and even anthracite coal tar itself may be employed as a pigment.

6. *Astringent Lotions.*—These are particularly useful in exudative (weeping) dermatoses. They differ among themselves in degree of irritative action. In acute inflammations, the diluted solution of lead subacetate, often miscalled lead water, used as a lotion or applied on gauze as a compress, is frequently beneficial, especially in poison ivy dermatitis. Another useful astringent lotion is a solution of aluminum acetate (N. F., Burow's solution), provided it is properly diluted with water. This solution, containing about 5 per cent of aluminum acetate, requires dilution with from 5 to 10 parts of water in order to be tolerated by the inflamed skin. Application in excessive strength to very sensitive tissue might increase the inflammation and even cause necrosis.

An example of an astringent and stimulating lotion for the treatment of acne is one composed of 3 per cent each of zinc sulphate, sulphurated potassa and precipitated sulphur in water. It is generally applied over night, and, of course, is not to be used in conjunction with a mercurial lotion.

7. *Deodorant Lotions.*—Potassium permanganate, deservedly a popular deodorant, is employed in

strengths of from 0.1 to 1 per cent in the form of baths or as irrigation for cavities, such as those of ulcerating carcinoma. The patient may be furnished with the crystals, a few of which he may dissolve in water to use as a foot bath in such a condition as bromhidrosis. When more accurate adjustment of the strength of the solution is required, a concentrated solution (5 per cent, the solubility of a given quantity of potassium permanganate being 1 in 13.5 parts of water) may be prescribed to be diluted before use; or else tablets of known strength (as 0.03 Gm. each) may be employed for solution in a specified amount of water. Permanganate stains may be removed by means of vinegar or of lemon juice.

8. *Alkaline Lotions.*—These are useful in the treatment of the itching of urticaria. Relief can often be obtained from a solution of sodium bicarbonate (from 1 to 5 per cent) or of sodium carbonate (from 0.5 to 3 per cent) or of borax (from 1 to 4 per cent) applied quite hot, and followed—without drying—by dusting with talcum.

9. *Antipruritic Lotions.*—When the itching skin is not inflamed, some of the irritative antipruritics may be employed, such as phenol (1 per cent) in water, or menthol (1 per cent) in alcohol, or both. However, phenol solution must never be applied under occlusive (waterproof) dressing, as this would invite the appearance of gangrene.

10. *Detergent Lotions.*—Ether and gasoline are energetic detergents; and, when their irritative action is not objectionable, are preferable to soap; most especially for the removal of nonsaponifiable oils from the skin, such as the petroleum products, now so generally used as lubricants. The cleansing action of soaps is due to their alkalinity and to their forming of a colloidal solution that, by emulsifying fat, removes the dirt, which is a compound of the fat of the epidermis, and "matter in the wrong place." From soaps we can obtain not only a cleansing (detergent) effect but also various degrees of irritation, so that they are contraindicated in acute skin disease. For skins deficient in natural fat, "superfatted" soaps have been put on the market, but these are poor cleansers. Cold cream or an emollient lotion will cleanse quite as well as such soaps, and are usually preferred.

Medication of soaps is, on the whole, a farce. Tar soap is merely soap perfumed with tar. Disinfectant soaps are no better than if nothing had been added to the soap (Norton). However, soap is by itself a potent disinfectant, green soap particularly. Indeed, liniment of soft soap (U. S. P.), also known as tincture of green soap, has been advocated as a venereal prophylactic (Reasoner). This liniment is also one of the best things for sycosis; it is used with water to remove the crusts and is followed by a soothing salve. Pumice soaps (sand soaps) are also useful for removing crusts in chronic skin disease. After using them, one should rinse well, and then apply a soothing ointment.

That crusts should be removed prior to application of remedial agents is merely a common sense principle of dermatology. The detergents named suffice for chronic cases. In acute cases, the best means for removing crusts without injury to the inflamed skin is a starch poultice; this is nothing more or less than laundry starch made into a rather thick paste and applied under covering for several hours or over night.

IV. LINIMENTS

Liniments (the term is derived from the Latin *linere*, to smear) are liquid preparations suitable for rubbing *on the skin, and are intended chiefly for endermic* action. To facilitate the rubbing, they are made to contain, as a lubricant, a fatty or a soapy body. They are sometimes called oliments, when containing oil or fat, and saponiments, when containing soap. They also generally contain a volatile or otherwise irritative ingredient, as the chief use of liniments is to produce hyperemia (rubefaction). The main difference between the various liniments lies in their various degrees of irritative action. There are, however, some liniments in which a specific effect on nerve endings is aimed at in addition, as in case of the A. B. C. liniment, an anodyne application popular in hospitals, which is composed of tincture of aconite, fluidextract of belladonna, and chloroform, 30 cc. of each, and sufficient soap liniment to make 240 cc.

Camphor liniment, also known as camphorated oil, containing 20 per cent of camphor in cottonseed oil, is so mild that it may be applied to the skin of babes; it constitutes a favorite domestic counterirritant application to the chest in the treatment of bronchitis in children.

Chloroform liniment, containing 30 per cent of chloroform in soap liniment, might serve as an example for the prescribing of extemporaneous liniments. The official soap liniment (sometimes referred to by its ancient name of opodeldoc), containing in addition to 6 per cent of soap approximately 5 per cent of camphor and 1 per cent of oil of rosemary, in 40 per cent alcohol, may be looked on as a basic liniment from which the extemporaneous preparation of liniments may be directed by the addition of medicated ingredients, such as methyl salicylate. Soap liniment may be medicated by adding to it volatile oils in proportions up to 25 per cent, with the exception of the volatile oil of mustard, which is so powerful an irritant that 3 per cent may be considered a maximum. This is the strength of the compound liniment of mustard (N. F.), which might serve as an example of one of the most powerfully irritative of liniments.

The bottle containing liniments should be plainly marked "For external use only," for many of them taken internally would be poisonous. For this reason it is desirable that they be dispensed in bottles that can be distinguished by the touch from those in which internal medicines are put. The patient should receive careful instruction in regard to the amount and character of rubbing (massage) desired. It may have to be very gentle or quite energetic, and it had better be planned according to the rules of scientific massage, though often planless rubbing is better than no rubbing at all. Indeed, sometimes the massage is more important than the liniment; and the advantage of ordering a liniment in such a case lies in the fact that certain patients are more readily induced to rub and knead a part faithfully with a liniment than they would with the hands alone. To prolong and increase the rubefacient effect, occlusive covering is sometimes applied. However, liniments containing strong volatile irritants, such as oil of mustard, should not be kept in contact with the skin for a long time under occlusive dressing, as painful blisters may result.

Scalp liniments, sometimes called scalp lotions or hair washes, are alcoholic or hydro-alcoholic, aqueous or oily solutions intended for application to the hairy scalp. As they are generally rubbed in, they might properly be classified with liniments. The addition of a small amount of castor oil (1 or 2 per cent, not more) to an alcoholic scalp liniment is of advantage if the hair has a tendency to be dry. Castor oil, be it noted, is the only commonly used oil readily soluble in alcohol Scalp applications are generally made antiparasitic, antiseptic or stimulant.

Thus, we might prescribe as a lotion for the treatment of dandruff an alcoholic solution of 2 per cent resorcinol with 1 per cent of castor oil.

A stimulant scalp lotion for the treatment of alopecia contains equal parts of tincture of cantharides, tincture of capsicum and the compound spirit of myrcia, N. F. (bay rum).

When commonly known and easily mixed substances suffice, no formal prescription need be written, and the patient may be permitted to prepare the application himself. In warfare against lice, a mixture of equal parts of kerosene and cottonseed oil is rubbed into the hair and scalp at bedtime; it may be kept from soiling the bed linen by a head covering, most conveniently a rubber bathing cap. It is washed off with soap in the morning. The procedure may be repeated the following night. Strong vinegar and the use of a fine tooth comb are required to eradicate the nits that resist the kerosene application.

(To be continued)

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

POLLEN EXTRACTS-ARLCO (See New and Nonofficial Remedies, 1925, p 288).

The following products have been accepted.

Acacia (Scap) Pollen Extract Arlco, Alfalfa Pollen Extract Arlco, Ash Pollen Extract Arlco, Box Elder Pollen Extract Arlco, Burning Bush Pollen Extract Arlco, California Walnut (Black) Pollen Extract Arlco, Cocklebur Pollen Extract Arlco, Cosmos Pollen Extract Arlco, Fleabane (Common) Pollen Extract Arlco, Goose Foot Pollen Extract Arlco, Hemp Pollen Extract Arlco, Indian Rice Pollen Extract Arlco, Indian Wormwood Pollen Extract Arlco, Live Oak Pollen Extract Arlco, Marsh Elder Pollen Extract Arlco, Meadow Fescue Pollen Extract Arlco, Mugwort Pollen Extract Arlco, Oat Grass Pollen Extract Arlco, Olive Pollen Extract Arlco, Pine Pollen Extract Arlco, Plantain Pollen Extract Arlco, Prairie Sage Pollen Extract Arlco, Poplar Pollen Extract Arlco, Privet Pollen Extract Arlco, Red Fescue Pollen Extract Arlco, Rye Grass Pollen Extract Arlco, Slender Ragweed Pollen Extract Arlco, Sweet Clover Pollen Extract Arlco, Sweet Vernal Grass Pollen Extract Arlco, Sycamore Pollen Extract Arlco, Thistle Pollen Extract Arlco, Velvet Grass Pollen Extract Arlco, Western Cottonwood Pollen Extract Arlco, Western Ragweed (Giant) Pollen Extract Arlco, Winter Fat Pollen Extract Arlco, Yellow Daisy Pollen Extract Arlco

Prepared by the method given for Pollen Extracts Arlco (New and Nonofficial Remedies, 1925, p 288)

POLLEN EXTRACTS-CUTTER.—Liquids obtained by extracting the dried pollen of plants with a liquid consisting of 67 per cent of glycerin and 33 per cent of a buffered saline solution

Actions and Uses—See Allergic Protein Preparations, New and Nonofficial Remedies, 1925, p 278

Dosage—See Allergic Protein Preparations, New and Nonofficial Remedies, 1925, p 278

Pollen extracts-Cutter are marketed in capillary tubes for diagnostic tests, in complete treatment set packages consisting of five vials representing graduated concentrations; namely, 1 in 40,000, 1 in 10,000, 1 in 1,000, 1 in 500 and 1 in 500, respectively, accompanied by a sufficient amount of physiological solution of sodium chloride for diluting the extract; in special packages (No. 1) consisting of two vials representing graduated concentrations; namely, 1 in 40,000, and 1 in 10,000, accompanied by a sufficient amount of physiological solution of sodium chloride for diluting the extract; in special packages (No 2) consisting of two vials representing graduated concentrations; namely, 1 in 1,000 and 1 in 500, accompanied by a sufficient amount of physiological solution of sodium chloride for diluting the extract.

Manufactured by the Cutter Laboratory, Berkeley, Calif. No U S patent or trademark

Annual Salt Bush Pollen Extract Cutter, Arizona Ash Pollen Extract Cutter, Bermuda Grass Pollen Extract Cutter, Black Walnut Pollen Extract Cutter, Canary Grass Pollen Extract Cutter, Careless Weed Pollen Extract Cutter, Coast Sagebrush Pollen Extract Cutter, Cocklebur Pollen Extract Cutter, Common Ragweed Pollen Extract Cutter, Cottonwood Pollen Extract Cutter, False Ragweed Pollen Extract Cutter; Giant Ragweed Pollen Extract Cutter, Johnson Grass Pollen Extract Cutter, June Grass Pollen Extract Cutter, Lamb's Quarters Pollen Extract Cutter, Live Oak Pollen Extract Cutter, Marsh Elder Pollen Extract Cutter, Mugwort Pollen Extract Cutter, Olive Pollen Extract Cutter, Orchard Grass Pollen Extract Cutter, Plantain Pollen Extract Cutter, Rabbit Bush Pollen Extract Cutter, Red Root Pigweed Pollen Extract Cutter, Red Top Pollen Extract Cutter, Russian Thistle Pollen Extract Cutter, Rye Grass Pollen Extract Cutter, Sagebrush Pollen Extract Cutter, Shadscale Pollen Extract Cutter, Sheep Sorrel Pollen Extract Cutter, Timothy Pollen Extract Cutter, Velvet Grass Pollen Extract Cutter, Western Ragweed Pollen Extract Cutter, White Oak Pollen Extract Cutter, Wild Oat Pollen Extract Cutter, Yellow Dock Pollen Extract Cutter

Pollen extracts Cutter are prepared by extracting the dried pollen with a menstruum composed of 67 per cent of glycerin and 33 per cent of an aqueous solution containing potassium dihydrogen phosphate (KH_2PO_4), 0.0908 per cent, sodium phosphate (Na_2HPO_4 12 H_2O), 0.238 per cent, and sodium chloride, 0.85 per cent The extract is clarified by Berkefeld filtration The finished liquid is a 1 per cent extract of the dried pollen, each cc representing 0.01 Gm of dried pollen

CONCENTRATED POLLEN EXTRACTS-SWAN-MYERS (See The Journal, May 30, 1925, p 1634).

The following product has been accepted:

Mixed Ragweed Concentrated Pollen Extract Swan Myers

Prepared by the method given in The Journal, May 30, 1925, p 1634, from a mixture composed of equal parts of the dried pollen of giant ragweed (*Ambrosia trifida*) and short ragweed (*Ambrosia elatior*)

GROUP PROTEIN EXTRACTS DIAGNOSTIC-P. D. & CO. (See New and Nonofficial Remedies, 1925, p. 294).

The following products have been accepted

Protein Extracts Diagnostic P D & Co Gramineae Group 28 (Bermuda Grass, Johnson Grass, Orchard Grass, Red Top, Timothy), Protein Extracts Diagnostic P D & Co Chenopodiaceae Group 29 (Halberd Leaved Orache, Russian Thistle, Western Water Hemp, White Goose Foot, Yellow Dock), Protein Extracts Diagnostic P D & Co Ambrosiaceae Group 30 (Burweed Marsh Elder, Cocklebur, Common Ragweed, Giant Ragweed, Rough Marsh Elder, Western Ragweed), Protein Extracts Diagnostic P D & Co Artemisia Group 31 (Indian Hair Tonic, Mugwort, Prairie Sage, Sage Brush, Wormwood Sage)

PROTEIN EXTRACTS DIAGNOSTIC-P. D. & CO. (See New and Nonofficial Remedies, 1925, p 289)

The following products have been accepted

Aster Pollen Protein Extract Diagnostic P D & Co ‡, Barnyard Grass Pollen Protein Extract Diagnostic P D & Co ‡, Bermuda Grass Pollen Protein Extract Diagnostic P D & Co ‡, Burweed Marsh Elder Pollen Protein Extract Diagnostic P D & Co ‡, Chestnut Pollen Protein Extract Diagnostic P D & Co ‡, Cocklebur Pollen Protein Extract Diagnostic P D & Co ‡, Common Ragweed Pollen Protein Extract Diagnostic P D & Co ‡, Corn Pollen Protein Extract Diagnostic P D & Co ‡, Cosmos Pollen Protein Extract Diagnostic P D & Co ‡, Crab Grass Pollen Protein Extract Diagnostic P D & Co ‡, Dahlia Pollen Protein Extract Diagnostic P D & Co ‡, Dandelion Pollen Protein Extract Diagnostic P D & Co ‡ Halberd Leaved Orache Pollen Protein Extract Diagnostic-P D & Co ‡ Giant Ragweed Pollen Protein Extract Diagnostic P D & Co ‡, Indian Hair Tonic Pollen Protein Extract Diagnostic P D & Co ‡, Johnson Grass Pollen Protein Extract Diagnostic P D & Co ‡, June Grass Pollen Protein Extract Diagnostic P D & Co ‡, Maple Pollen Protein Extract Diagnostic P D & Co ‡ Marigold Pollen Protein Extract Diagnostic P D & Co ‡, Orchard Grass Pollen Protein Extract Diagnostic P D & Co ‡, Plantain Pollen Protein Extract Diagnostic P D & Co ‡, Prairie Sage Pollen Protein Extract Diagnostic P D & Co ‡, Rose Pollen Protein Extract Diagnostic P D & Co ‡, Rough Marsh Elder Pollen Protein Extract Diagnostic P D & Co ‡, Sage Brush Pollen Protein Extract Diagnostic P D & Co ‡, Western Ragweed Pollen Protein Extract Diagnostic P D & Co ‡, Western Waterhemp Pollen Protein Extract Diagnostic P D & Co ‡, Wheat Pollen Protein Extract Diagnostic P D & Co ‡, White Clover Pollen Protein Extract Diagnostic P D & Co ‡, White Goose Foot Pollen Protein Extract Diagnostic P D & Co ‡, Willow Pollen Protein Extract Diagnostic P D & Co ‡, Wormwood Sage Pollen Protein Extract Diagnostic P D & Co ‡, Yarrow Pollen Protein Extract Diagnostic P D & Co ‡, Yellow Dock Pollen Protein Extract Diagnostic P D & Co ‡

Prepared by the method given in New and Nonofficial Remedies, 1925, p 289

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SATURDAY, JANUARY 23, 1926

PERITONEAL ADHESIONS

Intraperitoneal adhesions are common; congenitally, they exist as part of the anatomic development of the abdominal structures, and later they occur frequently in pathologic conditions, with beneficial or detrimental effect, as the case may be. An abscess walled off or an intestinal obstruction produced is only a different manifestation of the same alert potentiality for growth inherent in connective tissue. The only positive protection against adhesions is the smooth, intact mesothelium of the serosa. Destroyed by inflammation, surgery, trauma or other cause, it leaves the cells of the underlying serosa and subserosa free to proceed in a typical wound-healing process to the formation of granulations and eventually of fibrous adhesions. In these are blood and lymph vessels, nerves, elastic fibers and possibly smooth muscle, the anatomic basis for the symptoms indicative of the condition. If only disturbed or irritated by pressure or inflammation, these mesothelial cells can evidently dedifferentiate into active fibroblastic cells and join in the formation of new tissue. These are some of the points emphasized by Wereschinski[1] in his book describing his work on histopathology and tissue cultures, and including a thorough review of the literature on peritoneal adhesions.

Peritoneal exudate may glue the surfaces together, but the free cells in the exudate seem to take little or no part in the growth of new tissue. By the second day after injury, the fibroblasts of the subserosa are multiplying and migrating to the surface of the peritoneum, with their long axes at right angles to it.[2] Leukocytes, lymphocytes, polyblasts and plasma cells are present in large numbers. The healing progresses to the organization of the fibrin, the phagocytosis of the degenerated cells and the decrease of the leukocytes, while the fibroblasts and polyblasts (resting wandering cells) persist. This histologic review recalls other studies of these cells as part of the reticulo-endothelial system. According to Sabin,[3] the primitive endothelial cells give rise to the precursors of the red blood cells, and to the histiocytes (Aschoff), which intravascularly are recognized as monocytes and extravascularly as clasmatocytes. The differentiated clasmatocytes, fibroblasts, endothelial cells and reticular cells have distinct functions but, *under varying conditions*, lose their identities, and each is apparently capable of producing any of the other forms. This lability of form and related function is a striking feature of practically all cells of mesenchymal origin.

The potentialities of the disturbed or uncovered serosal and subserosal tissue are therefore of genetic interest, and also of direct practical interest to the surgeon to whom intraperitoneal adhesions as a serious postoperative complication are of especial concern. Certain general principles have been set down, particularly the preservation of the mesothelial covering itself, or of the conditions that will either allow the recovery of these cells or tend to produce regeneration of the destroyed mesothelium. Unfortunately, neither Wereschinski nor any other worker has discovered the specific means of assuring such results. Wereschinski also calls attention to the presence of smooth muscle in the adhesions of the intestine, and makes the suggestion that, in many cases at least, not an entero-anastomosis but a resection of the contracted mesentery may restore the function of the intestine without incurring the danger of further involvement of more tissue in the proliferative reaction.

THE TREND OF VETERANS' RELIEF LEGISLATION: STATE MEDICINE

Through paragraph 10 of section 202 of the World War Veterans' Act, 1924, the federal government planted the germs of state medicine in our body politic and entered directly into competition with the private practitioners and private hospitals of the country. Under the provisions of that paragraph, the government now treats at public expense diseases and injuries having no relation to any government service, military or otherwise. Veterans of the Spanish-American War, of the Philippine insurrection, of the Boxer rebellion and of the World War, suffering from neuropsychiatric or tuberculous ailments or diseases, or from paralysis agitans, epidemic encephalitis or amebic dysentery, or from the loss of sight of both eyes, are entitled as a matter of right to treatment and care in hospitals under the Veterans' Bureau, at government expense, whether their ailments or diseases are or are not of military origin. Veterans of any war, military occupation or military expedition since 1897 are entitled to that treatment and care whenever the director of the Veterans' Bureau finds facilities available, no matter what may be the nature of their disabilities, and no matter what may be their origin. The government pays traveling expenses incident to such treatment. Whether an applicant for treatment is rich or poor, is able to pay for treatment or belongs to the dependent classes, makes no difference, except that, in admitting patients of the latter class, preference is given to those financially unable to pay. The only condition the applicant must comply with is to prove illness or injury, to abandon his home physician and the hospitals of his own place of residence, and to enter a government institution, for treatment by physicians paid by the government.

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[1] Wereschinski, A.: Beiträge zur Morphologie und Histogenese der intraperitonealen Verwachsungen, Leipzig, 1925.

[2] Maximow, quoted by Wereschinski.

[3] Sabin, F. R.: Studies on Blood: The Vitally Stained Granules as a Specific for Erythroblasts and the Differentiation of the Three Strains of the White Blood Cells as Seen in the Living Chick's Yolk Sac, Bull. Johns Hopkins Hosp. **32**: 314 (Oct.) 1921.

The act providing these gratuities passed on June 7, 1924. During the fiscal year immediately following, July 1, 1924, to June 30, 1925, 13,243 persons claimed under it, without regard to the nature and origin of their disabilities, the privileges of government hospitals. They represented 17 per cent of the total number of patients admitted, 76,812. The duration of the stay of these 13,243 patients in the hospitals can be inferred from the fact that the average stay per patient of all patients discharged from Veterans' Bureau hospitals during the year was 93.7 days. The average in-patient operating expense for each patient daily during the year, so far as available figures permit it to be computed, was $3.98. If, then, the 13,243 patients treated for disabilities regardless of the origin of such disabilities be regarded as average patients, who stay an average time, 93.7 days, at an average cost, $3.98 a day, the expense to the taxpayers of the country of these patients while in hospitals was $4,938,659.02. This was exclusive of interest and depreciation on the extensive and costly hospital plant that must be maintained to render such service available; exclusive of traveling expenses of the patient hospitalized, which the government paid; and exclusive of the overhead expenses incident to the work of the Veterans' Bureau in administering and supervising these hospitals. And these figures represent only the first year's work of the bureau. As veterans become more familiar with the privileges granted, and as they become older and more subject to disability and disease, they may be expected to resort to government hospitals in increasing numbers, with increasing frequency, and at increasing expense to the government.

The gratuities already authorized will not mark the end of the bounties bestowed by an open-handed government at the expense of the taxpayers, if the proponents of such legislation have their way. Bills are now pending in Congress to extend to every beneficiary under section 10 of the World War Veterans' Act, 1924, outpatient treatment, in addition to the hospital treatment already authorized, and to grant the privilege of hospitalization and of outpatient treatment to Spanish-American War nurses, contract surgeons and contract dentists. Another bill proposes to extend a like privilege of hospitalization to all disabled ex-service men in the war between the states, including Confederate veterans. Another bill may be construed as entitling all civilian employees who served overseas during the World War to hospitalization at any time during the remainder of their natural lives, for any disease or disability. Other bills propose to give every disabled ex-service man, including Confederate veterans, the degree of disability not being stated and regardless of the origin of such disability, not only hospital care, but medical treatment, nursing, and all necessary care. And there are other bills yet to come.

As the disabilities for which benefits are given or proposed need have no relation to military or any other government service, or to the World War or to any other war, but may originate at any time in the future, out of any cause, government bounty need not be restricted apparently either to persons who served in the military service or even to civilian employees who served overseas. Persons who served overseas with the American Red Cross, the Salvation Army, the Y. M. C. A., the Knights of Columbus, and other auxiliaries would seem to have an equal claim to such benefits. And civilian employees who did not and could not serve overseas, members of draft boards, government employees generally, persons employed in ship yards, munition factories and other essential industries seem to be equally entitled to consideration. Their services were in many cases more valuable to the country at home than they would have been abroad, and many remained at home because of conditions over which they had no control, possibly because the government desired them to do so. And lest some legislator use this paragraph against us, be it said at once that its intent is sarcastic.

The theory underlying the existing and the proposed legislation providing hospital and outpatient care for veterans and certain other classes for disabilities not of service origin is not apparent. Heretofore, it has always been presumed that a person needing medical or surgical treatment should provide it for himself. If he cannot provide such treatment, it has been presumed to be the duty of the state to do so. Only when disease or injury has been incurred in the federal service has it been believed that the federal government should provide relief. Existing and proposed legislation, however, provides for the treatment of injuries and diseases that have not been incurred in the federal service. Such legislation must be based on some hitherto undiscovered principle of federal liability or create a new concept of it.

Possibly, this gratuitous federal treatment may have been conceived as a regard for military service. But a reward supposedly bears some relation to the nature and extent of the service rewarded, and this government bounty does not. Commissioned officers of all ranks and enlisted men fare equally. Men who never came within a thousand miles of danger are rewarded on the same basis as those who lost eyesight or limbs in No Man's Land. The struggling family of the man who gave up his life in the trenches is left to provide medical relief as best it can, for his widow and children get no hospital or medical care from this legislation. If this bounty is a reward, it must be considered, then, not as a reward for service in line of duty, but as a reward for contracting disease or incurring injury outside the service, and for abandoning home and home ties and becoming a dependent of the government and an inmate of a government institution; for these are the circumstances on which the *reward is based and to which it is proportioned.*

What the effect of the enactment of legislation of this character will be on the future of the medical profession is problematic. It seems likely, however, that by tending to withdraw patients from the care of private practitioners, and to place them under the care of salaried officers of the government, the practice of medicine will be made less attractive. The rewards of government service are not now generally such as to attract the type of men who seek to become physicians, or to hold them after they have once entered the service. This is illustrated at present in the experience of the Veterans' Bureau, which, in order to retain the many desirable physicians who have entered its service and to attract others, has found it necessary to seek legislation organizing the medical corps of the bureau into a "commissioned" body, so as to give it greater dignity, more secure tenure of office, and reasonable prospects of promotions and of retirement.

But apart from the general effect of such legislation on the profession is its tendency to withdraw patients from small cities and towns, and from country districts, to the larger cities, where the government hospitals are located. The opportunities for livelihood for physicians in the smaller cities and towns and in country districts will thus be diminished, and the inadequacy of medical service for those who must reside in such places and who are not entitled to free government treatment, or who cannot leave their homes to obtain it, will become more serious than ever.

Recognizing the danger in the situation, the House of Delegates, at the Atlantic City session, May 25-29, 1925, adopted the following resolution:

> *Resolved,* That the American Medical Association, through its accredited representatives and with the assistance of the accredited representatives of constituent organizations, whose cooperation is solicited, put forth every honorable effort to secure an amendment to the Veterans' Act of 1924, which will do away with federal free medical and surgical services and care for all veterans except those whose disabilities have been caused by war service for our country, or at least restrict free medical and surgical services and care to those veterans who are unable to pay for the same.

In accordance with this resolution, the constituent associations of the American Medical Association and the medical profession generally may be expected to protest against the bills now pending, and to ask a repeal of the legislation already enacted tending to federalize the practice of medicine and to nurture the germs of a system of state medicine.

THE SAFE AND SANE FOURTH OF JULY

In these days when the quest for health includes all sorts of efforts to prevent disease and prolong life, there is something almost criminal in the reckless abandon with which certain agencies are permitted to continue their menace of life and limb. Asserting that the care of individual and family health is the first and most patriotic duty of a citizen, Chief Justice Taft has urged a more vigorous attack on the factors that may impair the efficiency of the race. While it is true, he remarks, that to the public mind there is a more lurid and spectacular menace in such diseases as smallpox, yellow fever and plague, medical men and public health workers are beginning to realize that, with the warfare against such maladies well organized, it is now time to give attention to the heavy loss from lowered physical efficiency and chronic, preventable disease—a loss exceeding in magnitude that sustained from the more widely feared communicable diseases. But there is an added menace in all forms of carelessness that lead to preventable accidents. A recent writer, recalling the horrors of military struggle that have revealed the losses we sustain from warfare, reminds us that there is a daily battle going on with the forces and agencies that menace us in our environment.

We make much, and quite properly so, of the preventability of accidents. Museums of safety have been established to demonstrate this. It was reported by Ditman[1] several years ago that of 29,000,000 workers in the United States more than 500,000 are killed or crippled yearly as a direct result of the occupations in which they are engaged—more than were slain and wounded throughout the whole Russo-Japanese war. More than half of this tremendous sacrifice of life is needless. The perils that certain trades have for workmen have become the subject of regulatory legislation. The industries are continually being warned, reformed or compelled by legal enactment to make life and limb safer for their employees.

Yet there are other completely avertible perils that are faced unnecessarily and foolishly to an extent that reflects on our national intelligence. They do not lie in the path of duty. They are not incident to the demands of human welfare or progress. Among them is the Fourth of July menace, in which the innocent are all too often made to suffer with or instead of the guilty. A few years ago it seemed as if sanity were about to be the keynote of the celebration of Independence Day. Largely through the efforts of The Journal, the character of the dangers of earlier recklessness was widely emphasized. Much has been accomplished since in the way of reform. How great the need of added restriction is follows from the statistics of the past year. The Surgeon General of the United States Public Health Service has pointed out that in thirty-six states 111 persons were killed and 1,030 injured as the result of celebrating with fireworks last July 4. Of the injured, 148 probably will lose the sight of one or both eyes. In many cases, Dr. Cumming says, injury or death was due to fireworks considered harmless, such as sparklers, blank cartridges, cap pistols, skyrockets, small firecrackers and roman candles. Hence Surgeon General Cumming recommends in his annual report a renewal of the campaign against the use of fireworks on Independence Day. No one knows better than the physicians of this country how large a measure of wisdom this represents. It is not too early to sound the note of warning; and it needs to be repeated often and loudly.

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Current Comment

FEMININE IRRITABILITY

Half a century has elapsed since the studies of Erb and Westphal first emphasized the presumable diagnostic importance of the knee kick in relation to many diseases of the spinal cord. The light blow on the patellar ligament of a leg crossed over the knee is a familiar test to every practitioner. Strangely, the scientific interpretation of the phenomenon has not yet been completed to the satisfaction of critical investigators. Thus, it is still being debated whether the knee jerk is really a genuine reflex. The observation of the knee kick by the usual clinical procedure furnishes at best only crude information, so that minor quantitative variations in the responses are always of problematic significance. Physiologists have long recognized the fact that many factors, some of them of comparatively small magnitude, may affect the knee kick more or less markedly. Not only are there variations attributable to the strength of the stimulus used to elicit the muscular response,[1] but reinforcements may creep in from various sources. The results indicate that the irritability of the spinal cord varies widely as the result of incidental conditions. Lombard believes that the extent of the knee jerk is a sensitive indicator of the relative state of irritability of the nervous system. The response, he has found, is increased and diminished by whatever increases and diminishes the activity of the central nervous system as a whole. Accordingly, one must conclude from the studies of Williams[2] of the University of Illinois that women are perceptibly more irritable than men. On examining college students within the same age group under carefully controlled conditions, she found that the average height kicked in response to uniform stimuli was greater in women; furthermore, the knee jerk was absent much more frequently in men than in women. The findings may be worth bearing in mind in relation to the diagnostic uses of the reaction. One naturally hesitates to stress from any other standpoint the experimental conclusion that men are less irritable than women.

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At the forthcoming conference on medical education,[3] the program of which was published last week, several problems will be presented which are of particular importance at this time. The speakers on the program include members or official representatives of ten or more national associations, councils, federations or other agencies which are wielding an increasingly effective influence in the fields of general and professional education. Judicious and permanent results should develop from the mutual sympathy, understanding and cooperation engendered by such conferences. The first day's program concerns the closer relationship that has been established between medical schools and universities, making for the permanence and efficiency of the medical school as a teaching institution. Special consideration will be given to certain technical and detailed requirements established by standardizing agencies or licensing boards which, although highly important and useful at the time they were enacted, may long since have served their purpose and probably require modification or repeal, as otherwise they may hinder the changes of the medical curriculum necessary to provide the modern physician with better training as a general practitioner. In the program of the second day, discussion is given to the possibility of saving two or more years of the student's time during his preliminary and medical courses. Other papers refer to the hospital internship, which now represents not only the rounding out process for the physician's general training but also a common basis for advanced work leading to higher efficiency either in the field of general practice or in some specialty. It will be shown wherein opportunities for such training are accessible in graduate medical schools, in postgraduate assemblies with their diagnostic clinics, or through university extension courses. An important point for consideration is how facilities for higher training can be made available for all practitioners of medicine. The program of the third day deals with the general problems of medical licensure as viewed by representatives of several organizations or commissions. An especially urgent need has developed for a better system of licensure whereby the public can rest assured that every one authorized to care for the sick will have demonstrated a reasonably high degree of medical training and skill. The program nature and extent of the service rewarded, and this government bounty does not. Commissioned officers of all ranks and enlisted men fare equally. Men who never came within a thousand miles of danger are rewarded on the same basis as those who lost eyesight or limbs in No Man's Land. The struggling family of the man who gave up his life in the trenches is left to provide medical relief as best it can, for his widow and children get no hospital or medical care from this legislation. If this bounty is a reward, it must be considered, then, not as a reward for service in line of duty, but as a reward for contracting disease or incurring injury outside the service, and for abandoning home and home ties and becoming a dependent of the government and an inmate of a government institution; for these are the circumstances on which the reward is based and to which it is proportioned.

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Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: *such as relate to society activities,* new hospitals, education, public health, etc.)

CALIFORNIA

Fireproof Hospital Buildings.—According to an amended building ordinance which has been signed by the mayor of Los Angeles, the hospitals in that city must close or occupy fireproof buildings within the next eighteen months.

Annual Tax on Physicians.—The secretary of the state board of medical examiners desires to call the attention of physicians who are licensed to practice in California that the annual tax of $2 became due January 1, and that those failing to pay will be delinquent after sixty days.

Protest Osteopath's Appointment as County Physician.—Leading physicians of Oroville will appeal to the state board of health, it is reported, to annul the appointment, January 8, of an osteopath of Oroville by the name of Epperson as county physician of Butte County. The state law is said to require that county physicians have the degree of doctor of medicine.

Mrs. Hjalmar de Danneville Arrested.—The police of San Francisco recently arrested a woman, Mrs. Hjalmar de Danneville, on the charge of violating the state medical practice act. The woman, it seems, has been working the Abrams electronic fakery and at the same time posing as a man. Nearly three years ago, the board of supervisors of San Francisco amended the city ordinance which prohibited persons from appearing on the street in clothing of the opposite sex, so that Mrs. de Danneville could dress in men's clothing. In September, 1924, "Dr." de Danneville, as she called herself, protested to the editors of the San Francisco *Bulletin* against their attack on the Abrams' method and claimed that she could easily demonstrate the accuracy and utility of the ERA. De Danneville had been conducting classes in ERA technic, treating patients and making diagnoses from blood specimens sent in to her by other practitioners. The *Bulletin* asked Dr. Walter C. Alvarez of the University of California to aid them in putting de Danneville to the test. Dr. Alvarez took ten new glass slides, such as are used for blood work, and put a drop of blood on each of two of them. The blood was taken under the conditions said to be necessary by the disciples of Abrams. Each of the ten slides (eight of them blank) were then wrapped in new white paper and turned over to "Dr." de Danneville to identify. She was told at the outset that some of the slides were clean and others were spotted with blood. She was asked not to do any fancy work such as diagnosing nationality, religion or disease, but simply to determine which slides were clean and which were spotted. After performing the usual Abrams hocus pocus, de Danneville diagnosed the two spotted slides as clean and four of the clean slides as spotted!

DISTRICT OF COLUMBIA

"Bishop" Holler Sentenced.—A jail sentence of two years and a fine of $1,000 were imposed, January 9, on "Bishop" Helmuth P. Holler, president of "Oriental University," in the medical "diploma mill conspiracy case" in the District of Columbia. In passing sentence, Judge Stafford said: "If the court had the power, I should ask that the charter of 'Oriental University' be canceled and all diplomas issued to persons submitting affidavits or making false statements as to their qualifications be also canceled." In imposing the maximum sentence, the judge stated that he "could not conceive of any worse offense under statute of using the mails to defraud" than the one charged against Holler. If Holler were a rich man, Justice Stafford remarked that he would impose the maximum fine of $10,000 in addition to imprisonment (The Journal, January 9, p. 122).

FLORIDA

Health at Jacksonville.—Telegraphic reports to the Bureau of the Census for the week ending January 9, from sixty-nine cities of the United States with a population of 29,000,000, show that Jacksonville had the highest general mortality rate (27.8) and the highest infant mortality rate (153).

Dr. Bresnahan Goes to New York.—Dr. John F. Bresnahan, formerly superintendent of the James K. Jackson Memorial Hospital, Miami, has accepted the superintendency of St. Mark's Hospital, New York, succeeding Dr. Jesse L. McElroy, who is now superintendent of the University of Iowa Hospital, Iowa City.

Smallpox at Tampa.—Four cases of smallpox were discovered in negroes in Tampa, Dec. 10-11, 1925, and the number of cases had increased to a total of forty-three, January 12. Almost all of these cases have been mild. There have been no fatalities. The city health officer, Dr. Ernest C. Levy, writes that there is no unusual smallpox situation and nothing to create the slightest alarm. The only bad phase of the situation, he says, is that in the past vaccination had been almost completely neglected. He is conducting a vigorous campaign of vaccination, having distributed to employers 500 copies of a letter urging that they see that their employees are vaccinated at once, and another letter to physicians urging them to take the initiative in vaccinating families in which they practice and to be on the lookout for smallpox. A vaccination campaign also is under way in the schools.

ILLINOIS

Poliomyelitis Outbreaks.—The state department of health reports that five cases of poliomyelitis were reported last week from as many different places in the state. In the corresponding week last year there were no cases reported.

Chiropractors Leave Sterling.—State inspectors visited Sterling, January 5, to inform the chiropractors that unless they secured a license, court action would be started against them; the result was that chiropractors E. O. Oltmans, C. A. Stout, and Williams and Williams have closed their offices in Sterling.

Seventh Successive Decline in Tuberculosis Death Rate.—Provisional figures issued by the state health director indicate that the death rate of tuberculosis in 1925 in Illinois was 79 per hundred thousand population, a decline of two points from the previous year, and the seventh successive annual decline in the death rate in this state. Dr. Rawlings said that this drop began almost simultaneously with the "stupendous" eradication campaign that is going on, at a cost of more than $15,000 a day. Most of that sum goes to the thirty-one sanatoriums, which operate at an annual outlay of about $3,500,000; another million goes for testing cattle for tuberculosis. The death rate from tuberculosis in 1918 was 134, in which year 8,402 persons died; last year 5,508 deaths were attributed to tuberculosis. The decline in the tuberculosis death rate is regarded as justifying a campaign of eradication that is said to have no parallel in the history of the state.

Chicago

Joint Meeting.—The Chicago Medical Society and the Chicago Dental Society will hold a joint meeting at the Drake Hotel, January 27, at 7:45, which will be addressed by Dr. William D. Haggard, Nashville, Tenn., President of the American Medical Association, on "Team Work for the Health of the People," and by Sheppard W. Foster, D.D.S., president, American Dental Association, on "A Dental Educational Program."

Society News.—Drs. Peter Bassoe and George B. Hassin addressed the Chicago Neurological Society at the Palmer House, January 21, on "Brain Changes in General Paresis Treated with Tryparsamide."——Miss Maud Slye will address the Chicago Council of Medical Women, January 26, on "The Inheritability of Cancer."——Dr. Roy Grinker will address the Chicago Society of Internal Medicine, January 25, on "Pernicious Anemia, Achylia Gastrica and Combined Cord

Degeneration."——Dr. Esther Loring Richards, associate professor of psychiatry, Johns Hopkins University Medical School, Baltimore, will address the fifteenth annual meeting of the Infant Welfare Society of Chicago, January 27, at the Palmer House, on "Child Behavior."

Layman Board of Health.—Following the passage of an ordinance creating a board of health for Chicago, January 13, the mayor submitted the names of Mr. A. A. Sprague, commissioner of public works, Mr. Francis X. Busch, corporation counsel, Mr. Morgan A. Collins, chief of police, Mr. Frank Doherty, building commissioner, and Mr. Joseph F. Connery, fire commissioner, and the council confirmed the appointments. The board will act, the mayor said, in a judicial and advisory capacity to the commissioner of health, whose authority is not to be abridged by the ordinance. The action taken is said to have resulted from the health commissioner's campaign to provide the city with milk from nontuberculous cows by April 1; it is to prevent the state from defeating the commissioner's plan. Representatives of the state on the recently appointed milk commission are said to insist that there should be a delay with regard to the requirement that no milk shall enter the city from tuberculous cows.

INDIANA

Personal.—Dr. Willard A. Price has been elected mayor of Nappanee.——Dr. Albert E. Bulson, Jr., Fort Wayne, addressed the Montgomery County Medical Society, Miama, Ohio, Dec. 11, 1925, on "State Medicine."——Dr. Charles F. Holtzendorff, Plymouth, has been elected county health officer. ——Dr. Florence M. Olmsted has been appointed president, and Dr. William I. Scott secretary of the board of health of Kokomo.——Dr. Paul R. Tindall, Shelbyville, has been appointed county health officer to succeed Dr. J. Willard Parrish.——Dr. Thomas E. Conner, Houston, has been appointed county health officer to succeed Dr. David J. Cummings, Jr., of Brownstown.——Dr. Russell L. Hiatt has been appointed a member of the Richmond Board of Health to take place of Dr. Solomon G. Smelser.——Dr. Homer E. Line, Chili, has been appointed county health officer.——Dr. Joseph L. Allen, Greenfield, has been appointed county health officer of Hancock County.——Dr. William F. Shumaker, Butler, has been appointed health commissioner of DeKalb County for a term of four years, succeeding Dr. Willard W. Swarts, Auburn.

IOWA

Society News.—Dr. William H. Von Lackum, Mayo Clinic, Rochester, Minn., addressed a joint meeting of the Scott-Rock Island County Medical societies, Dec. 21, 1925, on "The Prostate as a Focus of Infection."

Personal.—Dr. Anthony P. Donohue has been elected president of the staff of the Mercy Hospital, Davenport; Dr. James R. Guthrie, president of the medical staff of St. Joseph's Mercy Hospital, Dubuque, and Dr. William J. S. Cremin, president of the surgical staff of St. Joseph's Hospital, Sioux City.——Dr. Alvin H. Hendrickson, Sioux City, has been appointed county physician.

KENTUCKY

Personal.—Drs. William C. McCauley and Samuel M. Steadman of Versailles, both of whom have served twenty years as members of the Woodford County Board of Health, tendered their resignations, effective, January 1.——Dr. Henry V. Johnson, Georgetown, has been elected president of the board of health of Scott County, to succeed the late Dr. William H. Coffman.——Governor Fields appointed Dr. George T. Fuller, Mayfield, a member of the state board of health, January 2.——Dr. J. Watts Stovall, Grayson, has been appointed by the governor a member of the state medical board to succeed Dr. Robert Julian Estill, Lexington, whose term expired.——Dr. Edward P. Whistler, Louisville, has been elected county health officer for a term of four years. ——Dr. Samuel L. Adair, Jr., New Washington, has been appointed county health commissioner.

LOUISIANA

Hospital for Algiers.—Mr. Jules Bodenger has donated a square of ground as a site for a hospital in Algiers, New Orleans, and also offered to match the individual cash donation of any resident in that part of the city. This suburb of New Orleans on the west bank of the river has no hospital; patients must be transported in ambulances on ferries. A campaign to raise about $100,000 for the construction of a hospital is being planned by the Algiers Branch of the Association of Commerce, and a hospital committee has been appointed with Dr. Alfred C. King as chairman.

MARYLAND

Six Hundred New Cases of Measles.—During the week ending January 10, 601 new cases of measles were reported in Baltimore, making a total, since Nov. 1, 1925, of 2,150 cases; two deaths were reported the previous week.

Quarantine Officer Appointed.—Dr. Charles W. Vogel has been appointed by the Surgeon General, U. S. Public Health Service, as quarantine officer at Baltimore to succeed the late Dr. Thomas L. Richardson. Dr. Vogel was born in Baltimore.

MICHIGAN

Beaumont Lectures.—Dr. Anton J. Carlson, chairman of the department of physiology, University of Chicago, will deliver the William Beaumont lectures before the Wayne County Medical Society, January 25-26, on "Studies on the Physiology of the Alimentary Tract": (1) "Motility"; (2) "The Digestive Secretions"; (3) "The Sensibility of the Gut."

Personal.—Dr. George H. Ramsey of the state department of health is spending a six months' leave of absence studying at Johns Hopkins University Medical School, Baltimore.——Dr. Forrest W. Barry, formerly of Niagara Falls, has been appointed assistant director of the health service at Michigan State College, Lansing, the state health commissioner announced, January 6.

MINNESOTA

Personal.—Dr. George H. Freeman has been appointed superintendent of the St. Peter State Hospital, St. Peter.——Dr. George T. Baskett has been appointed superintendent of the Willmar State Hospital, Willmar.——Dr. David L. Tilderquist, Duluth, has been elected president of the Minnesota Academy of Ophthalmology and Otolaryngology.

Increase in Death Rate.—The death rate of Minneapolis for 1925 is said to have been 11.5 per thousand population, as compared with 11.2 in 1924. There was an increase in deaths from tuberculosis, cancer, pneumonia and scarlet fever, and a decrease in the number of automobile fatalities and in deaths from heart disease. The birth rate in 1925 was 22.01, a decrease from 23.3 in 1924.

Outbreaks of Trichinosis.—Five cases of trichinosis recently occurred in Stearns County in persons who ate home-made, smoked, uncooked pork sausage, which had been prepared by relatives of affected persons who lived in North Dakota. An examination of sausage made by the Agricultural College in North Dakota demonstrated the presence of trichina, and blood smears from the patients examined by the Minnesota State Board of Health showed an eosinophilia ranging from 13 to 28 per cent. Another recent outbreak of trichinosis affected eleven members of one family in Jackson County, who also ate home-made, smoked and uncooked pork sausage. This sausage was shared with relatives from Iowa, and five of them also developed trichinosis. The state board was unable to obtain this sausage for examination; blood smears of these patients, however, showed an eosinophilia ranging from 16 to 64 per cent.

MISSOURI

Memorial to Dr. Shapleigh.—The Shapleigh family, St. Louis, has given $45,000 for the new auditorium of the St. Louis Medical Society, as a memorial to Dr. John Blasdel Shapleigh, who died Sept. 15, 1925.

Dr. Shankland Appointed Hospital Commissioner.—The director of public welfare of St. Louis has appointed Dr. James Wilbur Shankland hospital commissioner of that city to succeed the late Dr. Germaine A. Jordan. Dr. Shankland has been on the chief staff of the City Hospital for four years, and has been superintendent of the surgical clinic of St. John's Infirmary; formerly he was on the faculty of St. Louis University medical and dental schools.

Society Dedicates New Home.—The Jackson County Medical Society, Kansas City, dedicated its new home and library, January 5; among the representatives of other organizations were the mayor, the president of the Kansas City Bar Association, of the Chamber of Commerce, the president of the Missouri State Medical Society, the president of the Kansas City Dental Society, and the public librarian; among the conveniences installed in the new home are a lantern, blackboard, pulpit and call-system.

NEW YORK

Resignations at State Hospitals.—The State Hospital Quarterly [illegible] the resignations of the following physicians [illegible] hospital indicated:

Dr. [illegible] State Hospital, Sept. 30, 1925.
Dr. [illegible] State Hospital, July 23, 1925.
Dr. [illegible] State Hospital, Sept. 16, 1925.
Dr. [illegible] Park State Hospital, Aug. 16, 1925.
Dr. [illegible] River State Hospital, Sept. 21, 1925.
Dr. [illegible] State Hospital, July 15, 1925.
Dr. [illegible] Park State Hospital, Sept. 15, 1925.
Dr. [illegible] State Homeopathic Hospital, [illegible] Gowanda [illegible]
Dr. [illegible] Kings Park State Hospital, Sept. 1, 1925.
Dr. [illegible] Rowland, Gowanda State Homeopathic Hospital, Sept. 1, 1925.

Personal.—Dr. Ross D. Helmer, formerly senior assistant physician, Utica State Hospital, assumed the duties of physician in charge at Marshall Sanatorium, Troy, Dec. 1, 1925.——Drs. George N. Hall, Mary J. Ross, George S. Lape and William A. Buell have been appointed district health physicians for Binghamton.——Dr. Harry A. Pattison, field secretary, National Tuberculosis Association, has resigned, to take charge of a sanatorium at Hudson.——Dr. Archibald K. Benedict, Sherburne, has been appointed superintendent of the Chenango County Sanitarium to succeed Dr. Don U. Gould, resigned.——Dr. John J. Lloyd, Jr., for several years medical superintendent, Monroe County Tuberculosis Sanitarium, has resigned to devote his time to private practice.

New York City

Harvey Lecture.—Edward B. Wilson, Ph.D., professor of vital statistics, Harvard School of Public Health, Boston, will deliver the fifth Harvey Society lecture at the New York Academy of Medicine, February 6, on "Empiricism and Rationalism."

Society News.—The Audubon Medical Society of Washington Heights held its first annual dinner, January 21, at the Hotel Biltmore; the occasion was also a testimonial to Dr. Theodore K. Tuthill, who has practiced in New York for [illegible] years.

Booklet for Tuberculous Patients.—The Tuberculosis Sanatorium Conference of the New York Tuberculosis and Health Association has issued a booklet entitled "Getting the Most Out of Your Cure," for distribution to patients to help them understand tuberculosis, and to teach them how to care for themselves while in the hospital; it deals, in simple language, with food, rest, temperature, body weighs, personal hygiene, and the tubercle bacillus.

University News.—Columbia University announces courses in gastro-enterology, beginning January 26 and March 23, for those graduated in medicine who desire knowledge of the principles underlying modern diagnosis and treatment of gastro-intestinal disorders. There will be a preliminary course comprising seventeen exercises of which fourteen are lectures, and three roentgen-ray demonstrations, and a practical course comprising ten clinical and laboratory exercises. Communications should be addressed to the dean of the school of medicine, 437 West Fifty-Ninth Street.

Hospital News.—Brooklyn has appropriated $600,000 to double the capacity of the Coney Island Hospital.——All patients in the U. S. Marine Hospital on Hudson Street were removed to the base hospital in Brooklyn, Dec. 28, 1925.——The drive for $1,000,000 for the United Hospital Fund has passed the $565,000 mark, and will continue until February 15.——About $160,000 has been subscribed toward the fund to enlarge the French Hospital on West Thirty-Fourth Street, by a building to contain 175 beds.——The new Hillside Sanitarium at Jamaica, Long Island, was opened, January 6, by a banquet of physicians of that community.

Personal.—Dr. Hideyo Noguchi was given a complimentary dinner at the University Club, New York, January 15, by the trustees, scientific directors and members of the Rockefeller Institute for Medical Research.——Dr. Louis Dlugasch has been elected president of the Beth Israel Hospital Alumni Association.——Dr. Joseph Eastman Sheehan and Cornelius G. Coakley, among many others, will teach at the International Clinic of Oto-Rhino-Laryngology and Facio-Maxillary Surgery at St. Louis Hospital, Paris, France, from May to August.——Alfred J. Asgis, D.D.S., will be in charge of courses at the Stomatological School recently chartered by the University of the State of New York, and functioning under the auspices of the American Stomatological Association. He has resigned from the department of gastro-enterology of the New York Polyclinic Medical School and Hospital.

NORTH DAKOTA

Personal.—Dr. George H. Spielman, Mandan, has been elected president of the Sixth District Medical Society, and Dr. Robert W. Henderson, Bismarck, secretary-treasurer.

Health Work at Fargo.—The child health demonstration and the city health department of Fargo have brought about an increase of interest in health in that community. The Fargo commission has increased the appropriation for health work in the city, and the board of education has employed two school nurses to work twelve months in the year; six visiting nurses under the direction of the demonstration have reached almost 100 per cent of the infants and 1,209 preschool children, whereas, there were only 548 preschool children on their lists previous to last year. The gradual, upward trend of health among the school children is apparent; 14.4 per cent of them were free from physical defects last year, and only 6.4 per cent the previous year; 64 per cent of the mothers accompanied their children to the examinations last year. The medical society and the health authorities initiated a campaign against diphtheria; the Schick test has been applied in all but two of the fifteen schools. Only one resident case of smallpox was reported in the city last year, and 5,000 persons were vaccinated against smallpox. There were seventy fewer deaths in the city up to Dec. 15, 1925, than there were on the same day of 1924. Dr. William DeKleine, who has been in charge of the child health demonstration in Mansfield, will reach Fargo in February to take charge of the demonstration, succeeding Dr. William J. French, who was selected by the Commonwealth Fund to direct its health campaign in Austria; the city health officer is Dr. Burton K. Kilbourne.

OHIO

Record Epidemic of Measles.—There were 1,316 patients in Cleveland, under quarantine for measles, January 8, it is reported; 150 new cases were reported, January 7, and 200, January 6. This is said to be the largest epidemic of measles in the history of the city. The health officer considers that the situation is now under control.

Dr. Sloan Appointed to Lakeside Hospital.—The director of the Lakeside, Maternity and Babies' hospitals, Western Reserve University, Cleveland, announces the appointment of Dr. Thomas Dwight Sloan, as his associate. Dr. Sloan's particular work will be the administration of Lakeside Hospital; he was formerly medical superintendent of Peking Union Medical College Hospital, Peking, China.

Personal.—Dr. Samuel J. Ellison, West Union, has been reappointed health commissioner of Adams County.——Dr. Claud C. Craig has taken up the duties of the mayor of Urbana.——Dr. Edgar L. Vermilya has been reelected city health commissioner of Fremont.——Dr. Clifford J. Baldridge has been reelected health commissioner of Hamilton.——Dr. Frank W. Dannecker has been appointed health commissioner of Van Wert, to succeed Dr. Auldy T. Rank.——Dr. Jesse J. Heaton, McCutchenville, has been appointed health officer of Seneca County, to succeed Dr. Henry L. Hinkley of Green Springs.——Dr. John A. Gosling has been appointed city health commissioner of Tiffin.——Dr. Orange H. Thomas, Fremont, has been reappointed county health commissioner.——Dr. Norman E. Brundage has been reappointed health commissioner of Delphos.——Dr. George W. Heffner, Circleville, has been appointed county health physician.——Dr. Frank L. Moore, Fremont, has been reappointed county jail physician for the seventh consecutive year.——Dr. Walter J. Weiser has been reappointed health commissioner of Marion.

PENNSYLVANIA

Dr. Alexanderoff Fined.—Dr. Charles Dubin Alexanderoff, 702 Fifth Street, Philadelphia, was recently fined $500 for violation of the Harrison Narcotic Law, it is reported.

Gift for the Poor.—Dr. Henry T. Trumbauer, Coopersburg, has given $50,000 to St. Luke's Hospital, Bethlehem, the income of which is to be exclusively used for the treatment of patients who are unable to pay. Dr. Trumbauer, who is now 86 years of age, graduated from Jefferson Medical College in 1863, and has been in practice sixty-one years.

No Deaths from Typhoid in Erie.—The city health officer of Erie reported, January 5, that there were no deaths from typhoid in that city in 1925, although twenty-three cases of typhoid or paratyphoid were reported to the health department; in the winter of 1910-1911 there were 136 deaths in the city from typhoid. The recent record is attributed largely to the protection given the city water supply.

Miscellaneous Items.—The first full-time county medical director to be appointed in Pennsylvania, Dr. S. J. Dickey, Grove City, assumed his duties, January 1.——Four parochial schools in Philadelphia now have a *nursing service*, introduced by the Philadelphia Health Council and Tuberculosis Committee.——Wilkes-Barre recently conducted a diphtheria prevention campaign in which more than 8,000 children from two to fourteen years of age were immunized by means of toxin-antitoxin, according to the *Atlantic Medical Journal;* the work was done by the physicians of that city and the visiting nurses' association; a similar campaign was conducted two years ago.——In the recent campaign in Williamsport for $600,000 to rebuild the Williamsport Hospital, the physicians of that city subscribed $51,530. The goal was oversubscribed in a short time by $30,000.

Philadelphia

Medical Club Election.—Dr. Wilmer Krusen, director of public health, was elected president of the Medical Club of Philadelphia, January 15, at the Bellevue-Stratford Hotel. The following officers were reelected: Drs. Philip Marvel and Alexander MacAlister, vice presidents; Dr. William S. Wray, secretary; Dr. George A. Knowles, treasurer.

Diphtheria Immunization Authorized.—The Board of Public Education authorized immunization against diphtheria, by means of the Schick test and toxin-antitoxin, January 12, to be carried out by school medical inspectors among school children at the request of parents. The resolution adopted by the board was read by Dr. Solomon Solis-Cohen, chairman of the committee that prepared the resolution; Drs. William H. Zieglar and Edward Martin were the other members. The burden of the responsibility in immunization will rest on the department of public health of the city.

SOUTH CAROLINA

Dr. Riser Resigns.—Dr. Luther A. Riser, Columbia, for about fifteen years head of the county health department of the state board of health, has resigned to accept a position with the Pilot Life Insurance Company with headquarters at Greensboro, N. C., effective April 1. Dr. Riser will be connected with the health conservation department of the insurance company.

TENNESSEE

Dr. Haggard Honored.—At a conference of representatives of all civic organizations in Nashville, in accordance with an annual custom, Dr. William D. Haggard, President of the American Medical Association, was selected as Nashville's leading citizen for 1925. Dr. Haggard was awarded the Kiwanis loving cup, said to be the highest civic honor his community bestows.

Society News.—Dr. Joseph C. Crisler, Sr., was elected president of the Memphis and Shelby County Medical Society at the recent annual meeting; Dr. Louis Levy, vice-president; Dr. Thomas N. Coppedge, treasurer, and Dr. Arthur F. Cooper, secretary (reelected); this is the society's fiftieth year; the house of delegates held ten meetings last year and only once was a quorum lacking. Nineteen society members were received during the year by election, five by transfer and five were transferred to other societies. The membership now, 302, is the highest on record. Dr. John P. Henry recently addressed the society on "Diagnosis of Diabetes Mellitus," illustrated with lantern slides.——Dr. Oswald S. McCown has been elected president of the Memphis Urological Society; Dr. Thomas D. Moore, vice president, and Dr. Hubert K. Turley, secretary-treasurer.——Among the speakers not previously reported in The Journal for the Tri-State Medical Association which will meet in Memphis, January 26-28, at the Hotel Peabody, will be Dr. George W. Crile, Western Reserve University School of Medicine, Cleveland; Dr. Bethuel B. Vincent Lyon, Philadelphia; Dr. Walter S. Leathers, Vanderbilt University School of Medicine, Nashville; Dr. Charles L. Minor, Asheville, N. C.; Dr. Robert H. Babcock, Chicago; Dr. Thomas R. Brown, Johns Hopkins University Medical School, Baltimore, and Dr. Charles Jefferson Miller, professor of obstetrics and gynecology, Tulane University of Louisiana School of Medicine, New Orleans. The annual dinner of the Tri-State Medical Association will be January 27 (The Journal, Dec. 26, 1925, page 2041).——Dr. Walker L. Rucks has been elected president of the Memphis Pediatrics Society; Dr. Frank T. Mitchell, vice president, and Dr. William R. Blue, secretary-treasurer.——Dr. Eugene Orr was elected president of the Nashville Academy of Medicine, January 5; Dr. Harrison H. Shoulders, vice president, and Dr. Robert R. Brown, secretary-treasurer (reelected).

UTAH

Utah First "Over the Top."—The first state in the ninth corps area to fill its quota of medical reserve officers was Utah, according to a recent report in *California and Western Medicine*. The medical profession has contributed more than the number of officers allotted to the four medical department units for Utah. The Salt Lake County Medical Society has formally assumed responsibility, it is said, for the promotion and support for these four reserve units.

WASHINGTON

Applicants for Reciprocity Licenses.—Thirty-six practitioners from sixteen states appeared before the state medical examining board at Olympia, January 11, for licenses to practice in Washington by reciprocity with other states; nine were from Minnesota, four from Illinois and three each from Montana, Tennessee, Oregon and Idaho.

Three Years for Draft Evasion.—Dr. Arvid C. Silverberg, Seattle, was tried by court martial at Fort Lawton for evading the draft law of 1917, found guilty, and sentenced, January 9, to three years in prison at hard labor, it is reported. Dr. Silverberg, a native of Finland, came to the United States in 1910, and had taken out his first naturalization papers at the time of the draft. He entered McGill University Faculty of Medicine, Montreal, in 1918, and graduated in 1923. He was an intern in the City Hospital, Seattle, and has been engaged in practice in that city. The record of the trial will be reviewed by reviewing authorities.

WISCONSIN

Dr. Crawford Resigns.—Dr. Albert S. Crawford, Madison, has resigned as associate professor of surgery at the University of Wisconsin Medical School, and as neurosurgeon of the Wisconsin General Hospital, and has accepted a position as neurosurgeon at the Henry Ford Hospital, Detroit. He will take up his new duties, February 1.

Dr. Sauer Sentenced.—According to the *Wisconsin Medical Journal*, Dr. Frederick N. Sauer, proprietor of the Roosevelt Hospital, Milwaukee, was sentenced, Dec. 9, 1925, to serve eighteen months in a federal penitentiary and to pay a fine of $2,000 for violation of the prohibition laws through the sale of liquor prescriptions; one Arthur Steele, said to have been involved with Dr. Sauer, was fined $500.

Personal.—Dr. Carl H. Davis has been elected president of *the Milwaukee Academy of Medicine.*——Dr. Thomas W Tormey, Madison, has been elected a director of the Commercial Trust Company in that city.——Dr. Lawrence V. Littig has been appointed in charge of the department of diathermy at the Madison General Hospital.——Dr. Walter A. McEachern, Superior, has been appointed superintendent of the Superior Isolation Hospital in that city.——Dr. Lenore R. O'Brien, Harrisburg, Pa., has been appointed assistant physician on the medical staff of the Northern Colony and Training School, Chippewa Falls, to succeed Dr. Sophie A. Granosky, resigned.

Dr. Schmidt Appointed Professor of Surgery.—Dr. Erwin R. Schmidt, Chicago, has been appointed professor of surgery at the University of Wisconsin, Madison, and surgeon of the Wisconsin General Hospital, to succeed Dr. Carl A. Hedblom, who recently resigned to accept a similar position at the University of Illinois College of Medicine, Chicago. Dr. Schmidt graduated at the University of Wisconsin in 1913, and was instructor in the department of anatomy for a year; he graduated in medicine at Washington University, St. Louis, served internships at Barnes Hospital, in the service of Dr. George Dock, and at Augustana Hospital, Chicago, in the service of Dr. Albert J. Ochsner, and had training in neural surgery in the service of Dr. Charles H. Frazier at the University of Pennsylvania Hospital, Philadelphia. During the World War, Dr. Schmidt was in charge of Base Hospital no. 11, in France; he returned to Chicago to become chief of the assistant's clinic in the service of Dr. Ochsner, and from 1921 to 1923 he was exchange assistant in the service of Prof. Einar Key at Maria Hospital, Stockholm, and in the service of Professor Victor von Schmieden at Frankfort-on-the-Main. At the time of his appointment at Wisconsin, Dr. Schmidt was a member of the staff of the Augustana Hospital, Chicago.

CANAL ZONE

Society Election.—At the two hundred and twenty-eighth meeting of the Medical Association of the Isthmian Canal Zone, at the Ancon Hospital, Ancon, Dr. V. H. Cornell was elected president, Dr. Samuel D. Avery vice president and Dr. Lawrence Getz, secretary-treasurer; among others, Dr.

Howard K. Tuttle addressed the society on "Report of Interesting Obstetrical Cases," and Major Edmund B. Spaeth on "Ophthalmic Plastic Surgery by Cervical Flap" (with lantern slides). The February meeting will be at the Colon and Samaritan hospitals.

HAWAII

First Death from Anthrax.—U. N. Oussimenko, bacteriologist for the island of Mauai and a native of Russia, died at Puunene, January 13, of anthrax, the first death on record in the territory of Hawaii from that disease, it is reported; he is said to have been experimenting with anthrax bacilli obtained from a plantation on the island of Hawaii, and to have carried the infection to an abrasion behind his ear while putting on his spectacles.

GENERAL

Journal Changes Name.—Beginning with the January number, the name of the *American Journal of Electrotherapeutics and Radiology,* official organ of the American Electrotherapeutic Association, will be *Physical Therapeutics.* The former name was considered by those in authority as cumbersome and not "all-inclusive."

Examination in Otolaryngology.—The secretary of the American Board of Otolaryngology announces that an examination will be held by the board in Dallas, Texas, April 19, and in San Francisco, April 27; applications should be made to the secretary of the board, Dr. Hanau W. Loeb, 1402 South Grand Boulevard, St. Louis.

Congress on Internal Medicine.—Among the guests of the Congress on Internal Medicine to be held in Detroit and Ann Arbor, February 22-27, under the presidency of Dr. Charles G. Jennings, Detroit, will be Professor Knud Faber, University of Copenhagen, Denmark; Clarence C. Little, president, University of Michigan, Ann Arbor, Mich.; Prof. Charles F. Martin, McGill University Faculty of Medicine, Montreal; Dr. Andrew C. Ivy, Northwestern University School of Medicine, Chicago; Dr. William J. MacDonald, St. Catherines, Ontario, and Prof. Charles Manning Childs, Ph.D., University of Chicago, Chicago. A cordial invitation is extended to all physicians in good standing; information can be obtained from Dr. Frank Smithies, secretary-general, 920 North Michigan Avenue, Chicago.

New Tri-State Society.—The organization committee of the Tri-State Medical Society for physicians in West Virginia, Ohio and Kentucky, living in the Ohio Valley, announces the first meeting at Huntington, January 28. There will be a banquet at the Hotel Pritchard, on which occasion the permanent organization will be completed. The annual dues will be two dollars; there will be four meetings a year, and the place of meeting will rotate in a prescribed order. Dr. Festus O. Marple, 420 Eleventh Street, Huntington, W. Va., is secretary of the organization committee. At the meeting, January 28, Dr. Frederick M. Allen, Morristown, N. J., will discuss "Diabetes"; Dr. Clifford G. Grulee, Chicago, "Differential Diagnosis of Abdominal Pain in Children"; Dr. George W. MacKenzie, Philadelphia, "Differential Diagnosis of Syphilis and Focal Infection from Their Eye and Ear Manifestations," and Dr. Paul H. Ringer, Asheville, N. C., "Fallacies in the Diagnosis of Pulmonary Tuberculosis."

News of Epidemics.—Five cases of smallpox developed in Sioux City, Iowa, January 4. The city health officer considers there is little danger of an epidemic, since 20,000 persons have recently been vaccinated.——A number of rural schools in Lee County, Ill., were reported, January 6, to have been closed on account of an epidemic of measles.——Fifty cases of measles were reported in Wilkes-Barre, Pa., January 5; seventy-five cases, January 4, and twenty-seven cases, January 2; 185 cases were reported in December, 1925; a number of deaths have been attributed to the epidemic.——The city council of Detroit approved a special appropriation of $11,700 to combat the measles epidemic; the health commissioner reported that there were almost five times as many cases in December, 1925, as in November, there being 940 cases and ten deaths in December.——There has been an outbreak of twenty-five cases of diphtheria in Newport, R. I.; sixty-three persons have been placed in quarantine, including three city officials. There were known to be at least forty diphtheria carriers in the city previous to this outbreak.——Seven hundred cases of measles were said to have been in quarantine in Cleveland, Dec. 30, 1925.

Society News.—Dr. Joseph Erlanger was elected president of the American Physiological Society at the recent meeting in Cleveland; Walter J. Meek, Ph.D., University of Wisconsin, secretary, and Dr. Alexander Forbes, Harvard Medical School, treasurer. Drs. Arno B. Luckhardt, University of Chicago, and Carl J. Wiggers, Western Reserve University, Cleveland, were elected new councilmen.——Dr. Hans Zinsser, Harvard University Medical School, Boston, was elected president of the Society of American Bacteriologists at a recent meeting in Madison, Wis.; Robert S. Breed, Ph.D., New York, vice president, and James M. Sherman, Ph.D., of Cornell University, New York, secretary-treasurer. The next annual meeting will be in Philadelphia.——At the twenty-third annual convention of the Alpha Kappa Kappa Medical Fraternity, Atlanta, Ga., Dec. 29-30, 1925, Dr. William Engelbach, professor of Medicine, St. Louis University School of Medicine, St. Louis, was elected grand primarius; Dr. John P. Sprague, Chicago, grand president; Dr. E. Bates Block, Atlanta, Ga., honorary grand vice president; Dr. Charles Irvin Ennis, Atlanta, grand vice president; Dr. Edward L. Heintz, Chicago, past grand president; Dr. Albert B. Landrum, Columbus, Ohio, grand secretary-treasurer; Dr. Harry G. Irvine, Minneapolis, grand historian, and Dr. William A. Mann, Jr., Chicago, editor of the *Centaur.*——The Western Physiotherapy Association will hold its eighth annual meeting at Kansas City, April 15-16, at Hotel President; information can be obtained from the secretary, Dr. Charles W. Fassett, 115 East Thirty-First Street, Kansas City, Mo.——The Southern Section of the American Laryngological, Otological and Rhinological Society will meet at Asheville, N. C., February 27-28. A special night session will be devoted to the discussion of "Allergic Reaction." Among others, Drs. John A. Kolmer, Harry B. Wilmer, Jr., and George M. Coates, all of Philadelphia, will take part.

New County Society Presidents.—The following physicians have recently been elected president of the county medical society indicated:

Dr. Claudius E. Bandy, Bucklin, Kan., Ford County Medical Society.
Dr. Charles L. Bankhead, Paynesville, Mo., Pike County Medical Society.
Dr. James W. Boger, Sedalia, Mo., Pettis County Medical Society.
Dr. Harry Bookwalter, Columbiana, Ohio, Columbiana County Medical Society.
Dr. Frank V. Boyle, Bowling Green, Ohio, Wood County Medical Society.
Dr. Frederick H. Buck, Shokopee, Minn., Scott-Carver County Medical Society.
Dr. John P. Burke, Jr., California, Mo., Moniteau County Medical Society.
Dr. Robert McG. Carruth, New Roads, La., Point Coupee Parish Medical Society.
Dr. Ernest R. Cole, Winchester, Ky., Clark County Medical Society.
Dr. John M. Coleman, Loveland, Ohio, Clermont County Medical Society.
Dr. Mary G. Day, Kingston, N. Y., Ulster County Medical Society.
Dr. James A. Elliott, Battle Creek, Mich., Calhoun County Medical Society.
Dr. Morris H. Evans, Emerson, Neb., Cedar-Dakota-Dixon-Thurston and Wayne Counties Medical Society.
Dr. Rupert W. Ford, Otsego, New York, Otsego County Medical Society.
Dr. Posey D. Gum, West Plains, Mo., Howell-Oregon County Medical Society.
Dr. Jacob L. Hausman, Marysville, Kan., Marshall County Medical Society.
Dr. Walter A. Hoyt, Akron, Ohio, Summit County Medical Society.
Dr. Francis M. Kissell, Pitsburg, Ohio, Darke County Medical Society.
Dr. Frederick G. Kolouch, Schuyler, Neb., Colfax County Medical Society.
Dr. William P. Lee, Northfield, Minn., Rice County Medical Society.
Dr. Albert L. Majure, Dixon, Miss., Newton-Neshoba-Winston Tri-County Medical Society.
Dr. James A. McCollam, Ulrichsville, Ohio, Tuscarawas County Medical Society (reelected).
Dr. Colin McCormick, Owosso, Mich., Shiawasse County Medical Society.
Dr. John J. Moffett, Port Huron, Mich., St. Clair County Medical Society.
Dr. Thomas J. Perkins, Jackson, La., East and West Feliciana Parishes Medical Society.
Dr. Samuel F. Sanders, Holdrege, Neb., Phelps County Medical Society.
Dr. Edward Schunk, Sheridan, Wyo., Sheridan County Medical Society.
Dr. Fred L. Seger, Lansing, Mich., Ingham County Medical Society.
Dr. Ralph Sheldon, Lyons, N. Y., Wayne County Medical Society.
Dr. Karon P. Sutton, Lewisburg, Ky., Logan County Medical Society.
Dr. Eugene S. Thornton, Muskegon, Mich., Muskegon County Medical Society.
Dr. James A. Townsend, Eureka, Mo., St. Louis County Medical Society.
Dr. Granville B. Trout, Zanesville, Ohio, Muskingum Academy of Medicine.
Dr. Perry I. Tussing, Lima, Ohio, Allen County Medical Society.
Dr. Allison K. Walker, Buchtel, Ohio, Athens County Medical Society.
Dr. Robert B. Wallace, Baton Rouge, La., East Baton Rouge Parish Medical Society.
Dr. William D. West, Mendon, Mo., Chariton County Medical Society.

Bill to Label Lye and Other Caustics.—A bill has been introduced by Senator Pepper of Pennsylvania to safeguard the distribution of lye and other caustic substances in interstate commerce by requiring that they be labeled "poison" when in packages suitable for household use. The American

Medical Association has for many years urged the enactment of laws of this character; they have been enacted in Pennsylvania, Florida, Louisiana, South Carolina, West Virginia, Colorado, Minnesota, Nevada, New Hampshire, New Jersey, Oregon and Vermont. Senator Pepper's bill requires that the word "poison" be printed in large capital letters and run parallel with the main body of the reading matter on the label. It departs from the conventional requirement that "poison" be printed in red, which has been found easy to avoid by printing in red ink on a red or near-red background. Senator Pepper's bill requires that the color used shall be in distinct contrast with the background. The bill is worded so that it cannot be construed as limiting sales to registered pharmacists. Any merchant can sell the articles covered by the bill if he complies with the conditions laid down. Fines and imprisonment are provided for those who deliver for interstate shipment any dangerous caustics covered by the bill, otherwise than as provided by it. Substances unlawfully shipped may be seized through condemnation proceedings in federal courts. Prior to its introduction in the Senate, the bill was submitted to the Secretary of Agriculture, who stated that the purpose of the bill is laudable and that no sound objection can be made to the principles involved. The bill has the approval of the Lye Section of the American Grocery Specialty Manufacturers' Association, which represents the distributors of a large part of the lye sold for household use. Through its attorney, Charles Wesley Dunn, the association named has approved the measure. Senator Pepper's bill corresponds with the model state lye law that has already been adopted by most of the states named above. If enacted, it will tend to reduce to a minimum the difficulties encountered by the distributors of lye and other caustic substances, by making a single label adequate for interstate commerce as well as for commerce within the states that have adopted or may adopt the model law.

FOREIGN

Personal.—Dr. E. Joseph, Berlin, has been elected an honorary member of the Italian Urologic Society.——Dr. L. Lichtheim, Bern, professor emeritus, Königsberg, recently celebrated his eightieth birthday. A bust was unveiled at the medical clinic, and at Bern a second bronze bust was presented, designed for the medical clinic at Bern, where he worked for ten years early in his career, and where Biermer, Munk, Naunyn and Quincke also served for a time. Sahli is the present incumbent.——Drs. Lechler, Robert and Schnapauff are the oldest members of the Rostock Medical Society which celebrated its semicentennial in December.——The *Münchener medizinische Wochenschrift* mentions the return to Hamburg of Dr. E. F. Müller, privatdozent, who was given a two-year leave of absence to work at Columbia University, New York, on the invitation of the late Dr. J. A. Fordyce.——Dr. Pässler, Dresden, is to preside at the German Internal Medicine Congress, which meets at Wiesbaden, April 12, this year. The topics to be discussed are "Treatment of Neurosyphilis"; "The Blood as the Mirror of Somatic Processes," and "Asthma."——The Nobel prize in physics for 1924 has been awarded to Professor Siegbahn, Lund, for his researches on the roentgen ray. He is 39 years of age.——Professor Bar has been elected president of the French Académie de médecine, at Paris, and Professor Gley vice president.——An artistic plaque was recently presented to Prof. P. Mauclaire, Paris, by his friends and pupils in tribute to his long and devoted service as surgeon to the hospitals and as teacher.

Deaths in Other Countries

Dr. H. Luc, Paris, the laryngologist whose name is associated with the Caldwell-Luc operation on the antrum, aged 70.——Dr. E. Fraenkel, professor of pathology, Hamburg, aged 72.——Dr. F. Tuczek, professor of psychiatry, Marburg, aged 74.——Dr. J. Znojemsky, professor of surgery, Prague, aged 52.——Dr. P. von Kuznik, professor of surgery, Budapest, aged 61.——Dr. K. Abraham, Berlin, president of the International Psychanalysis Association, aged 48.——Dr. Bilhaut, founder of the International Hospital at Paris.——Dr. E. De Smet, emeritus professor at Brussels, aged 83.——Dr. J. Jankovski, emeritus professor of surgery, Riga, aged 76.

CORRECTION

Violation of State Pharmacy Act.—Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, writes that the citation of Dr. William S. Fowler to appear before the board, March 9, was based on his plea of guilty to a charge of violating the state pharmacy act instead of the state medical act (The Journal, January 2, page 42).

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 26, 1925.

Sexual Offenses Against the Young

A report of great importance has been made by the departmental committee on sexual offenses against young persons, which was appointed in 1924 to collect information, and take evidence as to the prevalence of sexual offenses against young persons, and report on the subject. The committee finds that there are many more sexual offenses against young persons than are reported; that when proceedings are taken the proportion of acquittals is high; that there is a considerable decrease in sexual crimes accompanied by violence; that there is a distinct increase in indecent assaults on boys and girls under 16, and that owing to the practice of reducing charges, mainly in the interests of the child, the statistics now include a proportion of more serious offenses, which is an additional ground for viewing their increase with concern. At present the "age of consent" (before which intercourse with a girl, even with her consent, is a crime) is 16 years. The committee has received much evidence of the instability of young persons, both boys and girls, during growth and adolescence. At this period, indiscipline and reckless conduct are not signs of maturity, but rather of ill balanced and poorly adjusted mental and emotional development. The committee therefore considers that it is unsound in principle that methods of control and of protection under the law should cease at 16, with the result that thereafter both sexes are held fully responsible as if they were adults. It recommends that it shall be an offense to have unlawful intercourse with a girl under 17; that the consent of those under 17 shall be no defense to an indecent assault, and that the Punishment of Incest Act shall be so amended as to prohibit a prosecution for incest of a girl under 17.

There is evidence of a considerable amount of indecent exposure to and of indecent assault on children in public places, especially in the summer months and during school holidays. The use of parks and gardens by young persons who are perhaps courting is one to which no exception can be taken, but the committee has had complaints of the harm done to children by the sight of couples lying in the grass in an abandoned and suggestive manner, and children have been known to watch and comment, and in some cases to imitate, such behavior. Cases of indecency in cinemas have been brought to the committee's notice, but it has reason to think that they are less common than formerly. The committee has made a number of recommendations which no doubt will be the basis of legislation:

1. The annual criminal statistics should contain a separate table giving complete returns as to sexual offenses against young persons, and the statistics of "attempts" should be shown separately.

2. It should be an offense, triable summarily and governed by the law as to indecent assaults, for a male to commit an act of gross indecency with a young person, male or female, under 16; the young person shall not be prosecuted for being concerned in the offense.

3. Courts of summary jurisdiction shall have power to grant a separation, maintenance, cost, and the legal custody of her children to a wife whose husband has been convicted of incest, carnal knowledge, or of the attempt, or of a grave indecent assault, on one of his daughters.

4. The "age of consent" shall be raised to 17.

5. The defense of reasonable belief that a girl was 16 or over (now available) shall be abolished; where there are extenuating circumstances, a young man found guilty on

indictment and placed on probation shall not have a conviction registered against him.

6. Twelve months (instead of nine as at present) shall be the time limit for taking proceedings under the Criminal Law Amendment Act (which deals with the offenses under discussion).

7. In the case of indecent offenses, properly trained women shall take the statement of girls; but when this is not possible, a woman shall be present while the policeman is taking the statement.

8. When a medical examination of a girl is necessary, it should, whenever possible, be carried out by a woman physician.

9. Subject to certain reservations, the court shall be cleared when young persons are giving evidence as to an indecent offense, and at no time shall a young person under 16 remain in court, unless his or her presence is specifically required.

10. The extreme difficulty of bringing to justice an offender committing offenses against a number of children separately shall be rectified by parliament.

11. The name, address or photograph of a young person concerned as a witness, or as a young offender, in these cases shall not be published except by the express order of the court.

12. After conviction, but before sentence, the bench shall remand all cases of indecent exposure, all sexual offenders previously found guilty of an indecent offense, and all cases in which the court suspects mental disease, disorder or defect.

13. Those who commit repeated indecent offenses against young persons shall be subject to prolonged detention in suitable institutions.

14. The statutory requirements as to the care of children employed in entertainments shall be extended to include the care of young persons up to the age of 17.

15. There shall be better supervision in parks, fairs, cinemas and school precincts.

16. Student teachers should receive instruction at college as to the best method of giving older children, individually, instruction on matters of sex.

The committee consisted of three men, three women and a physician (male) with a chairman (male). The three male members (excluding the physician) are unable to agree to the recommendation to raise the "age of consent" to 17, for the reasons, among others, that a female develops more rapidly than a male, and that a girl of 15 is generally materially older than a youth of the same age; that they are not satisfied that the weight of informed public opinion is in favor of raising the age of consent above 16; that the support given to the proposed change depends largely on confusion between the ideas of immorality and crime, and that punishing immorality with girls under 17 might result in producing a fresh class of criminals of one sex without necessarily raising the moral standard of the other. One woman member, while in favor of raising the age of consent, considers that this cannot be considered apart from the raising of the age of criminal responsibility for a boy. She believes that a case can be made out for raising the age in both sexes to 18. Two of the male members are unable to agree with the fifth recommendation, which in the case of a charge of carnal knowledge removes the defense of reasonable belief that the girl was 16 years of age or above. Thus it will be seen that the views of the committee show a sexual differentiation. It certainly seems that the women members (of whom only one is married) have in some of their findings failed to distinguish adequately between immorality and crime. Otherwise this carefully drawn up report, based on thorough investigation, should prove valuable in future legislation.

Sir Richard Douglas Powell, Physician to the King

Sir Richard Douglas Powell, Bt., an authority on diseases of the lungs and heart, has died at the age of 83. He was physician in ordinary successively to Queen Victoria, King Edward VII and King George V. He studied at University College Hospital, and graduated in 1865 as M.B. at the London University. In 1866 he took the London M.D. degree with honors. In 1867 he was admitted to the membership of the Royal College of Physicians of London, of which he became a fellow in 1873, senior censor in 1902, and president from 1905 to 1910. His first important appointment was assistant physician to Charing Cross Hospital, and lecturer on materia medica in the medical school; but he afterward moved to the Middlesex Hospital, to which he was for many years physician. He was also physician to the Brompton Hospital for Consumption. Friendship with Sir William Jenner led to his early introduction at court and to his appointment as physician in ordinary to Queen Victoria, a position continued by her two immediate successors, and for which his graceful and polished bearing, no less than his ability, rendered him especially well fitted. He wrote many important papers on the diseases of the lungs, the pleura and the heart. His book on Diseases of the Lungs has long been a standard work and gone through six editions. He was a great advocate of outdoor exercise, which he practiced himself.

Death of Two Physicians from Taking Drugs for Insomnia

The West London coroner held on one day inquests on the bodies of two physicians living in Kensington, both of whom had died from the effects of drugs. In the first case the physician, aged 49, was employed in the public health department of the London county council. His widow stated that he had complained of severe pains, due to an internal complaint, which he had had for nearly a year. In order to procure sleep he took morphine, cocaine and barbital. During his last days he had suffered more pain than usual. Dr. R. M. Bronte, government pathologist, said that death was due to barbital poisoning. The coroner said that he had no doubt he had inadvertently taken a slight overdose. He recorded a verdict of death by misadventure. The other physician, who was only 34, enjoyed fairly good health but suffered from insomnia. Sometimes he took more drink than was good for him. In order to overcome the insomnia he also took a special mixture and had admitted that on occasions it had been necessary to take stiff doses. The insomnia appeared to have been due to alcoholism. Dr. Bronte stated that the postmortem examination disclosed 6 ounces of red fluid in the stomach. Death was due to coma and asphyxia due to narcotic poison, probably a mixture containing chloral hydrate and Indian hemp. The coroner recorded a verdict of death by misadventure.

Social Insurance

At the conference on social insurance in relation to the work of the international labor organization of the League of Nations, Sir Arthur Newsholme, formerly principal medical officer of the ministry of health, said that there could be no doubt as to the value of existing official forms of social insurance and of the forthcoming extensions in respect of old age and for widows and children. They all helped to decrease the haunting fear which in the past beset all intelligent wage earners. This was inimical to health, and to have even partially removed it was scarcely less beneficial than the actual provision against unemployment, whether due to industrial conditions, to accident or to sickness, which was now made for one third of the population of this country. He drew attention to a fundamental consideration as to the merits, and the limits of the merits, of national health insurance. Without attempting to state the proportion between preventable and inevitable causes of death, he referred to the fact that only thirty-six out of every 100 deaths occurred at ages over 65. Every death at earlier ages meant that the debt of the individual to the community had been incompletely paid back. The magnitude of this economic loss was shown by the fact that 39 per cent of total deaths occurred at the working years of life—from 15 to 65. The demands of insurance funds and on the expenses of official and voluntary child welfare work would be immensely reduced if the people were educated to practice the art of hygienic living and would devote the greater part of the money now spent on beer and spirits to increased care of children, including better food and satisfactory housing. No system of medical attendance was satisfactory which separated the insured person from other members of the same family. The physician should be the medical adviser in health, and not only when minor complaints or more serious disease occurred. There was needed above all an intensification and extension of public health work in improved housing, protection of food, etc., and especially in attempting to diminish the evils caused by alcoholism, venereal diseases and tuberculosis—the three greatest causes of premature and preventable mortality—which were responsible for a high proportion of the sickness against which we provided benefits, while not doing their duty to secure their more rapid disappearance.

GENEVA

(From Our Regular Correspondent)

Dec. 26, 1925.

Narcotic Law

The sale of narcotic drugs is now so controlled that the Swiss public has great difficulty in obtaining them illegally. The federal council, Nov. 24, 1925, made the following changes of articles 8 and 24 in the law of June 23, 1925, concerning the sale of narcotics:

Article 8: Public pharmacies managed by druggists possessing diplomas recognized by the canton, likewise physicians, dentists and veterinary surgeons who are licensed to have a private pharmacy of their own may, without special authorization, buy, use, keep and dispense narcotic drugs within the limits of their professional need. However, public pharmacies which furnish narcotic drugs to other pharmacies, as far as these sales are concerned, come within the provisions of article 6.

Article 24: Physicians, dentists and veterinary surgeons who are not authorized by cantonal legislation to have private pharmacies must procure such stupefacients required in their everyday practice from a public pharmacy on a written prescription.

Physicians, dentists and veterinary surgeons who are authorized by cantonal legislation to have private pharmacies must procure such narcotic drugs as they need for their pharmacies from a public pharmacy.

All cantons may authorize public pharmacies to deliver as urgent medication to be immediately employed, the following preparations of opium of the Swiss pharmacopeia: tincture of opium, laudanum and Dover's powder. The quantity of these preparations delivered in the circumstances stated must not contain more than 0.15 Gm. of medicinal opium and must be inscribed with the patient's name in the prescription register of the pharmacy.

Frontier Sanitary Service

The improvement in sanitary conditions in Europe in general has lowered the risk of importing epidemic diseases into Switzerland. Accordingly, the frontier sanitary service, created in 1920 and strictly enforced since, will probably soon be abolished. The epidemics that raged in oriental Europe and for a long time menaced Switzerland have now disappeared. For some time cholera has not been observed in Europe, while plague is now encountered only occasionally in Mediterranean ports. Typhus fever, which has always been the most serious menace to Switzerland, is now rarely seen outside areas in oriental Europe where the disease is endemic. This has permitted reduction in the frontier sanitary service. The posts at Basle and Chiasso have been done away with, as it is now considered necessary at these two cities to submit to examination only those travelers returning from Russia. This particular work has now been turned over to the sanitary service of the canton of Basle. For that matter, this service is kept up more to give assistance to impoverished travelers from Russia than to prevent importation of diseases. The posts of Buchs and Brigue only are still active. The Buchs post examined 32,266 persons, 4,632 of them arriving from countries considered contaminated, and of these 1,115 had to be deloused. The remaining 27,634 persons consisted mostly of emigrants, workmen and transported children, all of whom for some reason or other required sanitary control. At the post at Brigue, 2,478 travelers were submitted to sanitary examinations.

Contagious Diseases

The annual report of the federal service of public hygiene for 1924 has just been issued and contains some data relative to contagious diseases in Switzerland. For some time there has been discussion as to the relationship between variola and varicella. During epidemics of variola in Switzerland, numbers of cases of varicella developed. During the years 1921-1924, the number of cases of varicella was greater than ever before. In 1920 there were 1,219 cases, and in the four succeeding years, 2,112, 2,202, 2,104 and 2,079, respectively. This increase is perhaps partially due to the fact that during the epidemic variola was mistaken for varicella.

Considering common contagious diseases, the report shows that in 1924 there was a decided decrease. This is most evident in diphtheria. There were 8,456 cases in 1920, 3,297 in 1923 and 2,656 in 1924. The same decrease has been noted in other countries and is the consequence of the periodic oscillations in the frequency of diphtheria. The Swiss sanitary authorities hope that with early diagnosis the disease may be adequately controlled by serotherapy and prophylactic vaccination of those who have been exposed. The number of bacteriologic examinations of suspected cases reached 9,212 in 1924. For this purpose the Swiss government had an appropriation of 15,000 francs ($3,000); hence, each examination cost a little more than 1½ francs (30 cents).

Scarlet fever has been decreasing for the last few years (3,939 cases in 1920, 2,272 in 1923), but in 1924 a slight recrudescence occurred, the number of cases being 2,351. This was especially due to an epidemic of 630 cases in the canton of Vaud, and 496 cases in the canton of Zurich. In many cases the disease assumed a severe type, an unusual thing in Switzerland. Measles also has been on the decline; in 1923 there were 10,316 cases, while in 1924 there were only 3,242. But oscillations are characteristic of this disease, so that too much reliance cannot be placed on this decrease as far as future epidemics are concerned. Typhoid, which has always been uncommon in Switzerland, reached 263 cases in 1922, and 340 in 1923. But in 1924 only 259 cases were recorded, so that Switzerland still has the fewest cases of this disease.

Contagious affections of the nervous system—epidemic encephalitis, epidemic cerebrospinal meningitis, and acute anterior poliomyelitis—decreased in frequency in 1924. There were only eighty-seven cases of encephalitis in 1924, as compared to 203 in 1923, and of meningitis there were thirty-three and sixty-nine, respectively, in 1924 and 1923. There were 257 cases of poliomyelitis in 1923, and 109 in 1924. The latter disease, usually sporadic, became epidemic, severe and highly contagious in 1923 in certain parts of Switzerland (cantons of Schwyz and Lucerne). In 1924, the affection retained its epidemic character in the canton of Lucerne; in the other parts of Switzerland it remained sporadic. Epidemic hiccup has appeared to the medical profession here, as in other countries, to be related to influenza or to epidemic encephalitis. Twelve cases were recorded in 1924. During the last few years, cases of trachoma have been reported from time to time, and in 1924 they reached a total of thirteen and the patients were interned in hospitals until the contagious phase had passed.

Neoplasms of Rectum

A thesis was recently upheld at Paris by Dr. René Galard on the operative indications and treatment of villous neoplasms of the rectum. These tumors, although benign for some time, may at length undergo malignant transformation. In the case of a benign growth with a very pliable, soft base, it is enough to excise the growth with its area of implantation, including a broad collar of healthy mucosa, although it is more prudent to resect the entire thickness of the rectal segments involved. When malignant transformation has taken place, perineal amputation of the rectum should be done; while, should the neoplasm have reached the inoperable stage, deep radiotherapy will give relief.

Gift to University of Strasbourg

The Rockefeller Foundation has recently made a donation of three million francs (roughly $10,500) to the Faculty of Medicine of Strasbourg. One million of this sum is to be used for building an otolaryngologic clinic; the second million is for building an institute of histology. The third million is to be used to subsidize research workers.

NETHERLANDS

(From Our Regular Correspondent)

Dec. 15, 1925.

The Fourth International Congress on Industrial Accidents and Occupational Diseases

In addition to the papers summarized in previous letters (The Journal, Dec. 5, 1925, p. 1825, and January 16, p. 213), several further interesting communications were presented at the fourth International Congress on Industrial Accidents and Occupational Diseases, held in Amsterdam.

COMPENSATION FOR MINOR INJURIES

Professor Julliard of Switzerland and Dr. Liniger of Frankfort, Germany, discussed the compensation for injuries resulting in disability of from 5 to 20 per cent. The custom of allowing compensation for minor injuries seems to be giving good results. Whenever follow up was possible, it was found that persons compensated for minor injuries had withdrawn their claims in spite of the persistence of considerable disability. If temporary compensation had not been allowed, in many instances disability would have been aggravated to such an extent as to have necessitated ultimately the granting of annual benefits. However, Dr. Baldi of Italy expressed the view that compensation for lower degrees of disability was too high. Baldi suggested that the lowest disability for which compensation be ordinarily allowed should be 15 per cent, in place of the present legal minimum of 5 per cent. However, injuries or diseases of the hand might be indemnified in cases of 10 per cent disability. The minimum compensatable disability of the eyes should ordinarily be 15 per cent; compensation for 10 per cent of disability should be allowed only in cases in which visual integrity did not exist before the accident. Greater discernment in compensation of minor injuries would allow better compensation for the higher ranges of disability.

TRAUMATIC ABDOMINAL AFFECTIONS

François (Belgium), Schmieden (Germany) and Schoemaker (Netherlands) emphasized the frequency of abdominal traumatism from accidents in congested traffic and, more particularly, from automobile accidents. Only a hospital examination will make possible logical treatment. If there is any doubt as to the condition of the abdomen, an exploratory laparotomy may be indicated.

TRAUMATIC ARTHRITIS

Waegner (Russia), Bircher (Switzerland), Smith (England), Ewald (Germany) and Tchudnowski (Paris) discussed traumatic arthritis and its sequels, especially traumatism of the semilunar cartilage. Correlation with an accident should be limited to cases in which arthritis develops during the first year following the accident and at the site of the injury. Absolute proof that an accident occurred must be furnished.

INDUSTRIAL MALARIA

Drs. Diez and Cioffi (Italy) considered whether malaria may ever be regarded as an industrial disease, and whether, in some cases, malaria may result from traumatism. Dr. Diez expressed the view that since the workman is no more exposed than the other inhabitants of the region, malaria could not be regarded as an occupational disease. Dr. Cioffi would exclude from the etiology of malaria all accidents, except severe injuries of the spleen or the bones, which might provoke the recrudescence of malaria.

TRAUMATIC COLOR BLINDNESS

Traumatic color blindness is rare and never permanent. Cioffi had, however, seen it extend over several years. Working capacity is not greatly reduced by color blindness except in certain classes; for example, railway employees. Disability from color blindness may be estimated as 5 per cent if unilateral and 15 per cent if bilateral.

TRAUMATIC UTERINE DISPLACEMENT

Dr. Hussy of Switzerland stated that posttraumatic uterine displacement is encountered only in grave accidents, and the diagnosis should not be made in the absence of the typical symptoms nor if the condition existed before the accident. This is not always possible to establish. Aside from these factors, a full bladder and beginning menstruation are predisposing causes. Operative treatment is not difficult, and compensation (a maximal rate of 10 per cent) is justified only when operation is impossible.

PARTIAL DISABILITY AND INDUSTRIAL REEDUCATION

In many cases of partial disability it is advisable to institute treatment by means of work. Dr. De Hartogh of Amsterdam advocates open-air work shops for victims of accidents. Dr. Oller described work in Spain along this line. Restoration of the capacity to work has been assumed by the government. An institute was opened last year, which endeavors to restore to disabled workmen the greatest possible capacity for work. De Maradiaga of Spain pointed out the necessity of examination of the physiologic, psychologic and mental condition of the patient. The author described the examination; how the record books of the examinees are kept, and how they are employed. In cases in which it is necessary to teach the disabled a new occupation, it is necessary to determine their adaptability for the given trade. The examination should be made under the control of the state, and with the object of giving the most complete instruction possible. Dr. Oller regards occupational reeducation of the disabled as constituting a problem for the solution of which the physician, the designing engineer, the psychologist and the foreman of the workshop must work hand in hand. An institute for the reeducation of disabled workmen must have departments of vocational guidance, surgery and physiotherapy; also schools and workshops for apprentices. Functional adaptation is only a part of reeducation; it includes all the branches of orthopedic and reparative surgery. Cineplastics and artificial arms have very limited application, and cannot be considered normal instruments. The Krukenberg operation is better adapted for the conditions of labor, but it presents other disadvantages. Industrial reeducation ought to be compulsory.

PNEUMONOCONIOSIS

Professor Collis (England) grouped under the head of pneumonoconiosis: asthma, bronchitis, pneumonia and fibroid phthisis. There are few forms of dust that are harmless if inhaled for long periods. Dr. Sleeswijck (Netherlands) considered particularly pneumonoconiosis and its relations to tuberculosis. The microscopic structure of dusts is unimportant. The less lime a dust contains, the less harmful it is. Silicon in dust is very injurious. The speaker discussed the difficulties of differential diagnosis. Only the discovery of tubercle bacilli establishes the diagnosis of tuberculosis. Of 963 stone cutters examined in the Netherlands, only six showed tubercle bacilli, and five of the six had hereditary defects. In cases of calcicosis and silicosis, tuberculosis is therefore of secondary importance. Dr. Sternberg of Austria suggested the following etiologic division of pneumonoconiosis: (1) microchemical; (2) colloidochemical local, and (3) anaphylactic. Dr. Böhme of Germany stated that only borers of from ten to fifteen years' employment present pneumonoconiosis verifiable by roentgen rays. The percentage is higher in borers of stone than in borers of coal. Only a small number reveal early pathologic symptoms or complain of illness. The low percentage of tuberculous miners is due to the careful selection of men for the work. Workers in stone quarries present a higher percentage than other miners. Dr. Alling observed relatively few tuberculous miners in Sweden, owing principally, he thinks, to good social, hygienic and family conditions. His observations are based on exact data.

OCCUPATIONAL DISEASES OF WOMEN AND CHILDREN

Professor Thiele of Germany declared that the future and the immediate welfare of society demand more strict control of the work of women and children. Industrial work taxes women beyond their strength, more than does house work. The working woman is far from being adequately protected, especially when pregnant or when nursing.

HEALTH INSURANCE IN RELATION TO OCCUPATIONAL DISEASE

Professor Ranaletti asserted that health insurance administrations should treat cases of temporary disability due to occupational disease as ordinary diseases, and cases of permanent disability on the same basis as accidents. Employers should pay insurance premiums, the amount of which should be determined by the kind of work and the risks involved. Furthermore, if there were levied a special premium ranging from 1 to 10 per cent, depending on the hygienic conditions of the industry it would be to the financial interest of employers to establish healthy surroundings and provide prophylactic measures. Decisions with reference to the origin of the disease, the degree of resulting disability and the amount of compensation should be made by a commission. Disputes should be settled by a commission of medicolegal experts. In order that the insured may not abuse the privileges of health insurance, a system of old age insurance should be created with health premiums inversely proportioned to the benefits received by the workmen during their period of activity. All the workmen should be subjected to periodic health examinations.

VOCATIONAL GUIDANCE

The problems of vocational guidance were treated by Van Wayenburg of Amsterdam, who explained the methods of psychotechnics. The graphic representation of vasomotor reactions is the method most frequently employed. The author classifies individuals into several different types—from the normal type down to the type of persons who completely lose their heads in time of danger. Van Went spoke on the reaction time of locomotive engineers and train conductors. Drs. Pryll and Knack of Germany pointed out that medical counsel is valuable for the protection of workingmen and for distribution of the unemployed. In the interest of all concerned, a physician should serve on the national labor commission. The author recommended the collaboration of physicians in the health insurance societies. In Germany the physicians in the schools and in the factories cooperate. Dr. Knack proposed greater centralization of industrial homes under the control of the state. Dr. Spielrein of Moscow discussed psychotechnical studies in the institute for the protection of workmen, at Moscow.

BERLIN

(From Our Regular Correspondent)

Dec. 5, 1925.

Visits of Professors Chagas and Semaschko

We have recently been visited by Professor Chagas, director of the public health service of Brazil and discoverer of the cause of Chagas' disease; also by Professor Semaschko, commissioner of the public health service of Russia. In honor of Chagas, a special session of the Berliner Medizinische Gesellschaft was called, at which the guest delivered a lecture on Chagas' disease. Professor Semaschko has done much toward reorganization of the Russian public health service. At a reception given in his honor at the Russian embassy, Professor Semaschko gave a short account of his reforms, from which I have taken the following statements:

Therapy is not the main object, but the health of the people as a whole. The old régime tended to increase the incidence of environmental diseases; that is, diseases that are associated with poverty, low cultural development of the population, and lack of hygienic habits. The soviet government was unable at first to give to prophylaxis its fullest expression. The war years had brought dissemination of infectious diseases, especially typhus and cholera. Typhus endangered the success of reconstruction activities, and even the existence of the republic. This was the time when, to use Lenin's expression, the question hung in the balance whether the louse would conquer socialism or socialism the louse. Socialism has now conquered the louse. The epidemics have gradually disappeared, and the government is now in a position to introduce sanitation measures, which are essentially prophylactic measures, to a much wider extent than formerly. They begin with the protection of the infant, or, more exactly, with the protection of the health of the mother. Prophylactic measures are directed particularly against social diseases, especially tuberculosis and syphilis. The crusade against these diseases is carried on by means of dispensaries which are charged not only with the healing of disease but also with the improvement of hygienic conditions in their districts. That the care for the health of the population must lie with the people themselves has been the watchword of soviet medicine since the first. In the cities this manner of public health administration has accomplished good results. In the rural districts progress has been slower. Village medical stations are as yet too few and too poorly manned and equipped to get the best results. The outcome has been increase in the population and reduction in the general mortality during the last few years. In the period from 1911 to 1913, the mortality was 27.3 per thousand of population. The birth rate was 43.8, and the excess of births over deaths was 16.5. In the years from 1920 to 1922, at the close of the war, the mortality was 33.4 and the birth rate was 33.0, or an excess of deaths over births of 0.4. In 1921, a year after the end of the war, the mortality was 22.7, or considerably lower than in the prewar period; the birth rate was 42.5, and the excess of births over deaths was 19.8, or 3.3 higher than in the prewar period. Infant mortality has been greatly reduced. Before the war, the rate in the cities had ranged around 25 per cent. At present the mortality rate in the province of Leningrad is 12 per cent; in the province of Moscow, 13.7 per cent, and in the province of Vladimir, 17.5 per cent. Also the mortality from tuberculosis is decreasing. In 1910, it was 34.4 per 10,000 population in Leningrad; in 1923, 29.3. In Moscow, the mortality from tuberculosis was reduced from 28.5 in 1910 to 17.5 in 1923, and to 16.5 in 1924. The hospitals receive a much larger number of patients than formerly, so that statistics have now a more reliable basis. Even in the rural districts, where there are fewer physicians, the frequentation of hospitals has increased.

Psychotechnical Examinations as Conducted by the Government Railway Service

Four years ago, a psychotechnical examining center for the government railway service was established in Berlin. Similar centers are located in Dresden and Munich. The purpose of these centers or institutes is to examine candidates as to their adaptability or aptitude for certain positions; to develop training methods for beginners, and to put these methods into practice. Since 1921, 17,500 applicants for positions have been examined, about 32 per cent of whom were accepted for employment. Of those accepted, from 94 to 95 per cent have proved themselves adequate to the tasks imposed on them; in 1924 the percentage ran as high as 96. Applicants are examined as to general intelligence, memory, ability to think on technical subjects, clearness of perception of objects in space, manual dexterity, ability to estimate distances and the size of objects with the eye, delicacy of touch in the use of governing mechanisms, tactile sense, and general aptitude for certain positions. For switchmen, locomotive engineers and cashiers there are certain special tests. Applicants for positions as cashiers are conducted to an electrically driven apparatus which throws up every five seconds a numbered aluminum plate, which the examinee is expected to transfer to a definite receptacle which bears corresponding numbers. There are special tests also for ticket agents and for baggage and freight agents. In a car specially equipped for experimentation purposes, special tests are applied to discover whether an applicant for the position of locomotive engineer possesses the necessary psychic qualifications for such responsible work. In a darkened room, a dummy engineer's cab is built and provided with the usual levers and brakes. The examinee looks through a window out on an imitation track. An endless chain flashes from time to time the same signals that the engineer encounters on a real track. The examinee is to manipulate the levers and the brakes according to the signals flashed. An exact record of each applicant's performance is kept.

Marriages

Otto Charles Egdorf, Sedalia, Mo., to Miss Kathleen O'Kelly Maxwell of Norcross, Ga., at New Orleans, Dec. 31, 1925.

Dennis F. Weldon, Nashville, Tenn., to Miss Susie Cannon of Ardmore, Tenn., Dec. 20, 1925.

W. Wells Baum, Marshfield, Ore., to Miss Daphne Conover of Madison, Wis., Dec. 24, 1925.

John Cyril Eby to Miss Margaret A. Mulcahy, both of Baltimore, Nov. 11, 1925.

Harry Olin, Boston, to Miss Jeanette Marilyn Steiner of St. Louis, Dec. 20, 1925.

Deaths

Murray Galt Motter ⊕ Washington, D. C.; University of Pennsylvania School of Medicine, Philadelphia, 1890; for several years professor of physiology, Georgetown University School of Medicine; at one time, chief inspector, District of Columbia Health Department, secretary-treasurer, National Confederation of State Medical Examining and Licensing boards, technical assistant and later librarian hygienic laboratory, U. S. Public Health Service; one of the incorporators of the United States Pharmacopoeial Convention, and at one time secretary of the convention; secretary on the section on pharmacology and therapeutics, American Medical Association, 1909-1910; joint author with Martin I. Wilbert of "A Digest of the Laws and Regulations in Force in the United States Relating to the Possession, Use, Sale, and Manufacture of Poisons and Habit-Forming Drugs," 1912-1913; aged 59; died, January 14, of coronary embolism.

Frank David Smythe ⊕ Memphis, Tenn.; Medical Department of the Tulane University of Louisiana, New Orleans, 1891; member of the Southern Surgical Association; past president of the Tennessee State Medical Association; formerly professor of diseases of women, Memphis Hospital Medical College, and professor of gynecology at the University of Tennessee College of Medicine, Memphis; on the staff of the Baptist Memorial Hospital and at one time on the staffs of the Memphis City and St. Joseph's hospitals; served in the M. C., U. S. Army, in France, during the World War; aged 58; died, January 1, at a local hospital, of heart disease.

Edward Franklin Wells ⊕ Chicago; Medical College of Ohio, Cincinnati, 1874; formerly professor of clinical medicine, University of Illinois College of Medicine; member of the Chicago Society of Internal Medicine and the Chicago Pathological Society; aged 72; died, Dec. 31, 1925, at Milwaukee, of myocarditis.

Cyrus W. Chidester, Delaware, Ohio; Columbus Medical College, 1890; member of the Ohio State Medical Association; formerly on the staff of the Jane Case Hospital; city health officer, formerly mayor of Delaware; aged 65; died, January 4, following a long illness.

Thomas Leonard Richardson ⊕ Baltimore; Baltimore Medical College, 1898; formerly city health officer; for fifteen years quarantine officer of the Baltimore station at Fort McHenry; aged 64; died, January 6, at the U. S. Marine Hospital, of heart disease.

Arnold Frederick Mueller, McHenry, Ill.; Milwaukee (Wis.) Medical College, 1908; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 39; died, Dec. 31, 1925, at Sheboygan, Wis., of pneumonia.

Edward Hitchcock, Springfield, Mass.; Dartmouth Medical School, Hanover, N. H., 1881; member of the Massachusetts Medical Society; since 1904 visiting physician for the state board of charities; aged 71; died, Dec. 25, 1925, at New Haven, Conn.

Herman Armin Klein, Chicago; Jenner Medical College, Chicago, 1899; College of Physicians and Surgeons, Chicago, 1907; on the staff of the Alexian Brothers Hospital, where he died, January 11, of gangrene of the gallbladder, aged 59.

Wilbert Pitkin Bunnell, New Britain, Conn.; Medical Department of the University of the City of New York, 1884; formerly health officer of New Britain; aged 65; died, January 2, of cervical adenitis and mediastinopericarditis.

Byron A. Deakins, Cartwright, Tenn.; University of Tennessee College of Medicine, Memphis, 1890; formerly physician of Hamilton County; aged 58; died, Dec. 6, 1925, at the Chattanooga (Tenn.) Hospital, of cholelithiasis.

William Irving Kelchner ⊕ Camden, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1893; medical director and proprietor of the Cape May County Emergency Hospital, Wildwood; aged 56; died, Dec. 26, 1925.

William W. Henegar, Ninnekah, Okla.; University of the South Medical Department, Sewanee, Tenn., 1900; member of the Oklahoma State Medical Association; aged 52; died, Dec. 24, 1925, at the Cottage Hospital, Chickasha.

Isaac Winfield Wright, Salida, Colo.; State University of Iowa College of Medicine, Iowa City, 1882; formerly mayor of Salida; for six years president of the board of education; aged 75; died, Dec. 30, 1925, of arteriosclerosis.

Thomas J. McKamy, Cleveland, Tenn.; University of Nashville Medical Department, 1898; member of the Tennessee State Medical Association; aged 57; died, Dec. 27, 1925, at the Newell Sanitarium, Chattanooga.

Michael A. Schutz, Elsinore, Calif.; University of Southern California College of Medicine, Los Angeles, 1899; proprietor and physician in charge of the Elsinore Sanitarium; aged 60; died, in December, at Long Beach.

Leonard Lee Gill, Caseyville, Ill.; Bellevue Hospital Medical College, New York, 1886; member of the Illinois State Medical Society; formerly on the staff of the Blessing Hospital, Quincy; aged 63; died, Dec. 28, 1925.

Media Andrews Bunker, Cleveland, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1905; formerly on the staff of the Woman's Hospital; aged 69; died, Nov. 15, 1925, at Primrose, Neb.

Ira W. Upshaw ⊕ Fort Pierce, Fla.; National University of Arts and Sciences Medical Department, St. Louis, 1889; member of the Missouri State Medical Association; aged 57; died, Dec. 30, 1925, of heart disease.

Melbourne Raynor, Victoria, B. C.; College of Physicians and Surgeons, Chicago, 1905; on the staff of St. Joseph's Hospital; aged 46; died in December, 1925, of burns received when a can of gasoline exploded.

Elmer Knebb Hottenstein, Akron, Ohio; Jefferson Medical College of Philadelphia, 1883; member of the Ohio State Medical Association; also a dentist; aged 64; died, Dec. 28, 1925, of organic heart disease.

Earl Frederick Smith, Lorain, Ohio; Western Reserve University School of Medicine, Cleveland, 1907; member of the Ohio State Medical Association; aged 44; died, Nov. 15, 1925, following a long illness.

Winfield M. Thome, Mount Joy, Pa.; Baltimore Medical College, 1906; member of the Medical Society of the State of Pennsylvania; formerly deputy coroner of Mount Joy; aged 44; died, Dec. 26, 1925.

Henry Pattison Ashe ⊕ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1901; formerly on the staff of the Mercy Hospital; aged 55; died, Dec. 30, 1925, at the Passavant Hospital.

Everett S. Matthew, Divernon, Ill.; St. Louis College of Physicians and Surgeons, 1885; member of the Illinois State Medical Society; aged 63; died, January 4, of cerebral hemorrhage.

George Elmer Flinn, Columbus, Ohio; Columbus Medical College, 1892; served in the M. C., U. S. Army, during the World War; aged 56; died, January 1, at the McMillen Sanitarium.

Clarence Kent Jump, Baltimore; University of Maryland School of Medicine, Baltimore, 1885; formerly on the staff of St. Luke's Hospital; aged 63; died, Dec. 28, 1925, of heart disease.

Stephen Harnsberger ⊕ Warrentown, Va.; Kentucky School of Medicine, Louisville, 1877; past president of the Medical Society of Virginia; aged 73; died, January 1, of gastric ulcer.

Phillip Marsden Thomas, London, England; Western Reserve University School of Medicine, Cleveland, 1890; aged 61; died, Dec. 4, 1925, of carcinoma of the stomach.

Arthur M. Brandon, Greenville, Ohio; Medical College of Ohio, Cincinnati, 1891; member of the Ohio State Medical Association; aged 59; died, Dec. 27, 1925, of pneumonia.

Walter B. Cheatham, Dawson, Ga.; Louisville Medical College, 1877; formerly mayor and postmaster of Dawson; aged 72; died, Dec. 25, 1925, following a long illness.

Edward Dismukes Crawford, Atlanta, Ga.; Atlanta School of Medicine, 1907; member of the Medical Association of Georgia; aged 44; died, Dec. 31, 1925, of pneumonia.

Philip William Otterbein Baer, Bardolph, Ill.; Jefferson Medical College of Philadelphia, 1885; member of the Illinois State Medical Society; aged 67; died, Dec. 31, 1925.

William Alfred Porter, Portland, Me.; Washington Homeopathic Medical College, Washington, D. C., 1896; aged 66; died, Nov. 25, 1925, following a long illness.

Cassius Dulany Laws, Bayard, Va.; University of Maryland School of Medicine, Baltimore, 1877; aged 68; died suddenly, Dec. 21, 1925, of heart disease.

Daniel A. De Forest, Boonville, Ind.; Yale University School of Medicine, New Haven, 1858; Civil War veteran; aged 92; died, Dec. 20, 1925, of senility.

George Willis Mills, St. Anthony, Iowa; Chicago Homeopathic Medical College, 1889; aged 69; died, Oct. 3, 1925, at Los Angeles, of chronic nephritis.

Albert A. White, Denver; Long Island College Hospital, Brooklyn, 1878; aged 73; died, Dec. 30, 1925, at St. Joseph's Hospital, following a long illness.

Jessie E. Robertson, Chicago; Hahnemann Medical College and Hospital, Chicago, 1886; aged 63; was found dead in bed, January 10, of heart disease.

David P. Philips, Kenton, Ohio; Starling Medical College, Columbus, 1877; member of the Ohio State Medical Association; aged 75; died, January 4.

Thomas Francis Daly ⊕ Chicago; Barnes Medical College, St. Louis, 1899; aged 51; died, January 8, of pulmonary tuberculosis and bronchopneumonia.

Paschal G. Caspian ⊕ Chicago; Harvey Medical College, Chicago, 1904; aged 70; died, January 8, of injuries received when struck by an automobile.

Thomas Weston Thomson, Knoxville, Ill.; Rush Medical College, Chicago, 1903; aged 52; died, Oct. 5, 1925, at Los Angeles, of endocarditis.

John T. Wood, Harrisburg, Mo.; Cincinnati College of Medicine and Surgery, 1870; aged 79; died, Dec. 28, 1925, following a long illness.

Paul J. Barcus ⊕ Crawfordsville, Ind.; Medical College of Ohio, Cincinnati, 1887; aged 63; died, Dec. 27, 1925, of cerebral hemorrhage.

Robert S. Simpson, McPherson, Kan.; University of Michigan School of Medicine, Ann Arbor, 1867; aged 86; died, January 2, at Wichita.

Albert Head Palmer ⊕ Marlboro, N. Y.; Medical Department of the University of the City of New York, 1876; aged 74; died, Oct. 19, 1925.

Warren W. Best, Bolckow, Mo.; University of Louisville School of Medicine, 1898; aged 31; died, Dec. 29, 1925, of cerebral hemorrhage.

Stella Manning Perkins, Hudson, Mass.; Boston University School of Medicine, 1880; aged 69; died in December, 1925, at Eastland, Texas.

John Hamilton Moore, San Antonio, Texas; University of Maryland School of Medicine, Baltimore, 1872; aged 77; died, Dec. 28, 1925.

Robert C. Campbell, Shreveport, La.; Medical Department University of Louisiana, New Orleans, 1867; aged 85; died, Dec. 12, 1925.

Joseph Valentine Haberer, Utica, N. Y.; Medical Department of Columbia College, New York, 1877; aged 70; died, Dec. 7, 1925.

John R. Hathaway, Everett, Wash.; Medical School of Maine, Portland, 1870; aged 79; died, Dec. 28, 1925, at San Diego, Calif.

George T. Britton ⊕ Kalamazoo, Mich.; Detroit College of Medicine and Surgery, 1906; aged 48; died, Dec. 29, 1925, of pneumonia.

T. Hamilton C. Bowie, San Francisco; University of Munich, Germany, 1879; aged 70; died, January 6, of paralysis agitans.

Carl Wander Halvor Rasmussen, Los Angeles; Loyola University School of Medicine, Chicago, 1917; aged 48; died, Dec. 29, 1925.

Ezra Prall, Henryville, Ind.; Kentucky School of Medicine, Louisville, 1898; aged 53; was killed, January 2, when struck by a train.

Claude Lafayette Spencer ⊕ Dallas, Texas; Baylor University College of Medicine, Dallas, 1920; aged 32; died, Dec. 24, 1925.

Pius Renn ⊕ New York; Medical Department of the University of the City of New York, 1896; aged 57; died, January 1.

Francis H. Harrison, Evanston, Wyo.; Bellevue Hospital Medical College, New York, 1866; aged 83; died, Dec. 28, 1925.

John H. Ross, Winterhaven, Fla.; St. Louis Medical College, 1873; Civil War veteran; aged 81; died, Dec. 29, 1925.

Marion Thompson Martin, Woodburn, Iowa (licensed, Iowa, 1886); Civil War veteran; aged 85; died, Dec. 29, 1925.

Walter S. Haven ⊕ Racine, Wis.; Northwestern University Medical School, Chicago, 1891; aged 63; died, Dec. 22, 1925.

Calvin A. Chollett, Toledo, Ohio; Toledo Medical College, 1893; aged 60; died, Dec. 9, 1925, of cystitis and toxemia.

William Augusta Allen, Grand Saline, Texas; Meharry Medical College, Nashville, Tenn., 1900; died, January 5.

William Bryant Blackstone, Fort Wayne, Ind.; Chicago Medical College, 1884; aged 65; died, Dec. 26, 1925.

A. W. Foreman, White Hall, Ill. (licensed, Illinois, 1888); Civil War veteran; aged 85; died, Dec. 31, 1925.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

VITALAIT STARTER OMITTED FROM N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. Puckner, Secretary.

Vitalait Starter (Vitalait Laboratories, Newton Center, Mass.) is a culture of *Bacillus bulgaricus* and *Streptococcus acidi-lactici* in symbiosis intended for the home preparation of fermented milk (New and Nonofficial Remedies, 1925, p. 200).

A physician who wrote to the Vitalait Laboratories of Newton Center, Mass., was informed: "We have not supplied this regularly for some time since the Concentrated Vitalait is superior in every way. . . ." He was supplied with circular matter which dealt in the main with a culture of *B. acidophilus* which is advertised as "Vitalait." This preparation the Council found unacceptable for New and Nonofficial Remedies because it is marketed under a noninforming name; because the claims made for it are unwarranted and misleading; and because it is exploited to the public in a way to lead not only to its use for imaginary ills, but also for conditions in which correct diagnosis and rational medical treatment are all important (The Journal, Dec. 19, 1925, p. 1985).

The Council directed the omission of Vitalait Starter from New and Nonofficial Remedies because it is used as a means of advertising an unacceptable preparation "Vitalait."

STREPTOCOCCUS VACCINE AND MIXED STAPHYLOCOCCUS ACNE VACCINE OMITTED FROM N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. Puckner, Secretary.

In 1921 the Council decided to omit streptococcus vaccine preparations and vaccines containing a mixture of staphylococci and acne bacilli from New and Nonofficial Remedies when the period for the accepted preparations had expired, unless evidence should develop in the meantime permitting a different course.

The Council decided on this action because experience with these preparations has not established the value which it was hoped they possessed, and because recognized experts to whom the Council looks for help have concluded that streptococcus vaccine and vaccines representing a mixture of staphylococci and acne bacilli have no field of usefulness.

The period of acceptance of the preparations of streptococcus vaccine and staphylococcus-acne vaccine now in New and Nonofficial Remedies expires with the close of 1925. No new evidence has developed to show that these preparations have therapeutic value: therefore, the Council directed the omission from New and Nonofficial Remedies of all streptococcus vaccines and all vaccine mixtures containing staphylococci and acne bacilli.

Syphilis in Africa.—There is one disease, at any rate, that has scourged the whole country and which, until lately, was quite unknown among certain pagan tribes. The European contribution to its spread in West Africa would seem to be through conquering unconquered pagan tribes and then permitting Moslem missionaries to implant their faith and their infirmities in virgin soil. Syphilis seems to follow faithfully, if impartially, the Cross and the Crescent.—Sharp, N. A. D.: *Tr. Roy. Soc. Trop. Med. & Hyg.* **19**:260 (Oct.) 1925.

Correspondence

CONVALESCENT SERUM IN POLIOMYELITIS

To the Editor:—It seems imperative that sharp exception be made to the report of five cases of poliomyelitis treated with intramuscular injections of convalescent serum by Drs. E. B. Shaw, H. M. Thelander, and E. C. Fleischner of San Francisco (The Journal, Nov. 14, 1925), on the basis that the clinical facts presented are at variance with the usual and definite symptomatology of early poliomyelitis.

Poliomyelitis is characterized by a preparalytic period of a fairly uniform duration of three days. This period is in reality the active phase of the disease and is then followed by the appearance of the paralytic sequelae. The manifestations of this early period are remarkably constant. Fever is seldom high, averaging 102 and rarely above 103 F. Headache, rigid neck and tremor constitute an important and almost constant triad of findings. In addition, there may be a peculiar apathy and listlessness but never delirium or coma and, on examination, their mental clearness and alertness are striking. Vomiting and diarrhea may occur, but are rarely pronounced. These symptoms of the preparalytic period are those of a meningeal involvement and, as such, are readily confirmed by spinal fluid findings. The cellular picture of the fluid varies with the severity of the infection and also in reference to the time of puncture. Fluids taken late in the preparalytic period or in the early preparalytic stage show a smaller number of cells and, with the establishment of the paralysis, the cells disappear entirely. The number of cells per cubic millimeter, in the average case and at twenty-four hours, would safely be put at 350 to the cubic millimeter; a cell count below 100 is very unusual and might be interpreted as occurring in a very mild case or at the end of a preparalytic period. Those below 50 in the presence of high fever are almost insignificant and would give rise to much doubt as to the existence of this disease.

Of the five cases reported there is no clinical picture that is consistent with poliomyelitis and, although apology is made for lack of fluid confirmation, there is no comprehensive excuse for such omission. Case 1 may possibly have been a mild and atypical case, but its duration was short, fever was low, and the diagnosis was apparently based entirely on the lack of grasping power of the left hand. This, it must be held, would be difficult to determine fully in a child 3½ years of age, and is, furthermore, against poliomyelitis, as the proximal part of an extremity, such as a shoulder girdle, is usually first involved in any paralytic extension, and the hands and fingers are the last to go. In case 2, "lumbar puncture was not done on account of the evident diagnosis." It must be asked "Why evident?" Certainly, "temperature 104, the delirium pronounced, and incontinence of feces and urine" do not indicate it. Apparently, the diagnosis was made on unobtained abdominal reflexes and diminished knee and Achilles jerks. Rigidity of the neck is noted, but the child was delirious. This certainly is not poliomyelitis. In case 3, "there was no rigidity of the neck," and stress is made on absent abdominal reflexes in a child 5½ years of age; also there were no spinal fluid findings. This, likewise, is definitely inconsistent with poliomyelitis. Case 4 is reported in detail as a case of "fulminating poliomyelitis, with death almost a certainty." The temperature was 105.6, and yet the spinal fluid showed only 62 cells. This case and case 5 were characterized by frequent bowel movements containing blood and mucus, and were most undoubtedly those of a severe intestinal infection and, like the preceding three, are clinically inconsistent with poliomyelitis. In case 5 the proof against that diagnosis seems almost complete, as the cells in the spinal fluid were only 25 and there was an initial chill of two hours' duration.

During the epidemic of 1916 and since that time, as consultant to the Syracuse health department, I have had a wide experience with the early diagnosis of poliomyelitis. Possibly the disease may be appearing in an unusual form throughout the West, but cases presenting hyperpyrexia of 105, delirium, severe diarrhea, and vomiting, absent or slight rigidity of the neck, and cell counts below 50 in the spinal fluid, are sharp exceptions to the usual manifestations of this disease. In the outbreak of 1924, with 133 cases in Syracuse alone, many instances occurred, often in close association with poliomyelitis, of a peculiar two or three day febrile disease with symptomatology mainly referable to the intestinal tract and quite similar to the five cases in question. These cases occasionally gave rise to confusion but were never considered as poliomyelitis, and never developed paralytic sequelæ.

I am firmly convinced of the value of convalescent serum, but only if given intraspinally and in the properly diagnosed case with full clinical and spinal fluid confirmation. Furthermore, such serum is difficult to obtain and it should be conserved for the best established method of administration.

In conclusion, it appeals to this observer that the diagnosis of poliomyelitis cannot stand in any one of these five cases, and their favorable interpretation of the value of intramuscular administration of serum should be entirely discounted.

Wardner D. Ayer, M.D., Syracuse, N. Y.
Assistant Professor of Neuropathology, Syracuse
University College of Medicine; Consultant in
Acute Infectious Diseases of the Nervous
System, Syracuse Health Department.

[Note.—The letter of Dr. Ayer was referred to Dr. E. C. Fleischner, who replies:]

To the Editor:—With due consideration to Dr. Ayer's experience, it hardly seems justifiable for any man to generalize as he has done in either a positive or a negative way concerning a disease the characteristic features of which are as variable as those of poliomyelitis. It would be possible, if one were willing to take the time, to quote many references to show that Dr. Ayer's generalizations are based on a large experience, but that it is not possible to draw accurate deductions in connection with this disease from the observations of any one person or even from many case histories.

In case 1, Dr. Ayer absolutely ignores the headache, the rigidity of the neck, the bilateral Kernig sign, the marked tremor and the rapid pulse, the first three of which symptoms he himself classifies as constituting "an important and almost constant triad of findings." In case 2 he doubts the diagnosis on account of the high temperature, the pronounced delirium and incontinence of feces and urine, which arguments can be quickly met by referring to the literature. He comments that "rigidity of the neck is noted, but the child was delirious," and fails to note that the rigidity of the neck persisted after the delirium had cleared up; furthermore, he ignores the headache and marked tremor. In case 3, Dr. Ayer ignores the headache, the fever, the paresthesias and the definite history of exposure. In case 4, Dr. Ayer again ignores the headache, neck rigidity and tremor, his own triad of symptoms, as well as the pain, vomiting, positive Kernig sign, positive Brudzinsky sign and abnormal reflexes, and questions the diagnosis on account of diarrhea with blood and mucus and the cell count of only 62 cells.

Were one inclined to sensitiveness, one might regret the fact that Dr. Ayer was so uncharitable as to believe that in a well regulated hospital diarrheal stools containing blood and mucus would not be investigated most thoroughly in an effort to determine the presence of intestinal infection. In case 5 Dr. Ayer again fails to comment on the presence of headache, nuchal rigidity and tremor as well as the dizziness, pain, positive Kernig sign, hyperesthesia and weakness in the left arm, and deigns to doubt the diagnosis on account of the initial chill and the cell count of 25. With reference to the question of chills at the onset of poliomyelitis one might refer Dr. Ayer to the monograph on Infantile Paralysis in Vermont, pages 49 and 64.

Since the paper was published we have had two additional cases: A nurse about 24 years of age had a temperature of 102, headache, paresthesias, nuchal rigidity, weakness of the grip in the left hand, positive Kernig sign, and increased reflexes, more marked in the left arm and leg, with a cell count of 230. She was given 90 cc. of convalescent serum thirteen hours after the onset of her symptoms, with a return of temperature to normal within twenty-four hours, with a persistence of her headache, backache, and slight nuchal rigidity for three or four days, and recovered without paralysis. A boy, aged 18 months, had been exposed to his brother, who had a frank paralysis of the arm. He was brought into the hospital fifteen hours after the onset of his illness. The essential symptoms of his condition were slight diarrhea, and rise in temperature, and on examination he showed retraction of the head, nuchal rigidity, a temperature of 101 at 5 a. m., rising to 103.6 by 10 p. m., and a cell count of 260. He likewise made a prompt recovery following the injection of convalescent serum and convalescent citrated blood. I am sure that Dr. Ayer will furthermore be interested in a series of observations that were made on twenty-four frankly paralyzed patients, in view of his attitude on the value of certain symptoms and the lack of value of certain others. The temperature was over 103 in 42 per cent; there was diarrhea and abdominal pain in 16 per cent; unconsciousness, delirium or coma in 33 per cent; chill at the onset in twelve per cent, and vomiting in 66 per cent. Twenty-nine per cent were paralyzed on the third day; 16 per cent, on the first and second day. The remainder, more than 50 per cent, after the third day. In five of these frankly paralyzed patients in whom lumbar puncture was done in the preparalytic stage, the cell counts were below 100 in every one.

Dr. Ayer ventures to suggest in his letter that "there is no comprehensive excuse for the omission of the lumbar puncture in the first three cases." That, after all, is a matter of opinion. It is not within the province of this letter to enter into a discussion as to the reasons for having omitted the lumbar puncture in these first three cases beyond the mere statement that lumbar puncture in the painful stages of poliomyelitis is an operative procedure that is worthy of definite consideration. Granted that it is harmless, one cannot lose track of the fact that unless a questionable diagnosis is to be cleared up or pressure symptoms relieved, the performance of lumbar puncture is not justifiable unless intrathecal therapy is to be used. As this was not contemplated, lumbar puncture was omitted when positive clinical diagnoses could be made. As stated in the paper, when it became evident that the results of intramuscular serum administration were striking, lumbar puncture was done for confirmation of the diagnosis so that the type of criticism which Dr. Ayer has seen fit to make might be avoided.

A survey of the literature will quickly convince the most critical that the following quotations from Dr. Ayer's communication are the opinions of an individual and do not portray the tremendous variability in the symptomatology of poliomyelitis gathered from compilations and studies of equally experienced clinicians:

1. "*Poliomyelitis is characterized by a preparalytic period of fairly uniform duration of three days.*"
2. "Fever is seldom high, averaging 102 and rarely above 103 F."
3. There is "never delirium or coma, . . . mental clearness and alertness are striking."

4. "Vomiting and diarrhea may occur, but are rarely pronounced."

5. "With the establishment of the paralysis, the cells disappear entirely. The number of cells per cubic millimeter, in the average case and at twenty-four hours, would safely be put at 350, . . . below 100 is very unusual and might be interpreted as occurring in a very mild case or at the end of a preparalytic period."

E. C. Fleischner, M.D., San Francisco.

To the Editor:—In The Journal, Dec. 19, 1925, appeared a letter from Dr. Kenelm Winslow, Seattle, taking exception to some of the statements in my letter to The Journal on the subject of human serum in the treatment of acute poliomyelitis, September 26. My reason for writing again is to call attention to the unfortunate incomplete and consequent misquotation of one sentence from my letter.

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It is unfortunate that Dr. Winslow permitted this misstatement to occur, because it tends to confuse rather than clarify the issue. George Draper, M.D., New York.

Queries and Minor Notes

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REDUCTION OF PROTEIN — TOTAL GLUCOSE REQUIREMENT — GLUCOSE REQUIREMENT

To the Editor:—1. How does a writer on diabetes figure that 58 per cent of protein is reduced to sugar and 46 per cent to fatty acids (some say 44 per cent)? This seems mathematically impossible. 2. Why does Woodyatt divide the total calories by 17 to get the total glucose requirement? 3. How does he figure the carbohydrate requirement 9/10 glucose-½ protein? (You may omit my name.) E. O. P., M.D., Indiana.

Answer.—1. The writer referred to does not state that 58 per cent of protein is reduced to sugar and 46 (or 44) per cent to fatty acids. The writer assumes that 100 Gm. of protein when completely catabolized may introduce into the body some 58 Gm. of glucose. The experimental evidence on which this assumption is based is as follows: When a fasting dog is completely phlorhizinized and the urine is collected by six, eight or twelve hour periods continuously and analyzed quantitatively for glucose and nitrogen, the ratio of glucose to nitrogen finally settles to virtual constancy and remains practically the same from period to period. When this constancy is established it will often be found that the ratio of glucose to nitrogen is in the neighborhood of 3.65 to 1 Gm., as held originally by Graham Lusk. The assumption is that in these conditions all the glucose and all the nitrogen are coming from one and the same source; namely, protein. Stating this relationship in plain English, it means that for each hundred grams of protein broken down, 58 Gm. of glucose appears in the urine. Thus, if the nitrogen was 1 Gm., the total amount of protein from which this 1 Gm. of nitrogen was derived would be 6.25 × 1, or 6.25 Gm., because the nitrogen of protein represents about 16 per cent of the total weight of protein. If, then, 1 Gm. of nitrogen appeared in the urine for a given period, this would imply that during that period some 6.25 Gm. of protein was broken down and if in that period 3.65 Gm. of glucose appeared in the urine, this 3.65 would represent 58 per cent of the total 6.25. Lusk observed that when fasting dogs which were showing this ratio consistently from period to period were fed protein in the form of flesh, the total nitrogen and the total glucose both increased, but that the ratio tended to remain the same. So, according to this experimental evidence, 100 Gm. of protein may introduce into the metabolism 58 Gm. of glucose. Our correspondent may be reminded that protein originally contains no glucose whatever. It contains, on the other hand, certain amino-acids which in the course of their metabolism drop certain groups and add others, with the result that out of 100 Gm. of protein there comes into existence in the body 58 Gm. of glucose that would not have been there otherwise. It may be remarked that when one conducts phlorhizinized dog experiments one does not always obtain a constant D to N ratio at the figure of 3.65:1. Lower ratios are also sometimes encountered, and this is particularly true when the phlorhizin experiment is carried on for a sufficient number of periods or when the action of phlorhizin is combined with the action of epinephrine in dosages sufficient to remove all glycogen from the animal. Depancreatized dogs and phlorhizinized-epinephrinized dogs very often come to a constant ratio at 2.8:1, 2.9:1 or 3.0:1 instead of 3.65:1. There is therefore some question as to whether 100 Gm. of protein does actually yield as much as 58 Gm. of glucose or whether some of the glucose which *appears in the urine when the ratio is 3.65:1 may not in part be derived from some other source.* However, the basis on which the writer figures that 100 Gm. of protein may introduce into the metabolism 58 Gm. of glucose (dextrose) is the observed occurrence of 3.65:1 D to N ratios in the conditions specified.

Concerning the 46 per cent of fatty acids, it may be said that *protein contains none of the higher fatty acids* to begin with, nor does it in the course of its metabolism yield any higher fatty acids whatever. Protein in the course of its digestion in the alimentary tract yields a medley of amino-acids, and certain of these amino-acids when metabolized in the body are capable of yielding acetoacetic or beta-hydroxybutyric acid. One molecule of a certain amino-acid, such as tyrosine, leucine or phenylalanine, has been shown to be capable of yielding one molecule of acetoacetic or beta-hydroxybutyric acid. Now, one molecule of a higher fatty acid, such as palmitic or stearic acid, is also capable in the course of its oxidation in the body of yielding one molecule of acetoacetic or beta-hydroxybutyric acid. Therefore, in respect of its power to yield acetoacetic or beta-hydroxybutyric acid, one molecule of one of the amino-acids in question is the equivalent of one molecule of higher fatty acids. The quantities of these amino-acids found by analyses in muscle protein by Osborn form the basis for the proposition that protein in the course of its catabolism is capable of liberating as much acetoacetic or beta-hydroxybutyric acid as though it contained 46 per cent of its weight in higher fatty acids. In other words, 100 Gm. of protein is equivalent in ketogenic power to 46 Gm. of higher fatty acids. The equation is intended to express this relationship and not the content of higher fatty acids in protein nor the amount of higher fatty acids produced in the body by the catabolism of protein. As stated above, protein neither contains nor introduces into the body any higher fatty acid in the course of its catabolism.

2. Woodyatt observed that when patients were on diets of such caloric magnitude that in the course of the day all the carbohydrate protein and fat of the diet was catabolized and that no carbohydrate protein or fat was stored and no tissue carbohydrate, protein or fat broken down in addition to that which was given in the diet, then acetone was observed to make its first appearance in the urine in supernormal quantities when the diet was so balanced that the ratio of fatty acids (and ketogenic equivalents) to glucose was in the neighborhood of 1.5:1. The fatty acid to glucose *ratio* of 1.5:1 implies *a mixture of carbohydrate protein and fat* in which the fat equals approximately twice the carbohydrate plus half the protein. That is to say, when the fat of a food mixture equals twice the carbohydrate plus half the protein in the same mixture, the fatty acid to glucose ratio, if figured out, will be found to be a little lower than 1.5:1. Diets in which the fat equals twice the carbohydrate, plus half the protein, yield for the average adult the largest amount of ketogenic acids and the lowest amount of glucose compatible with freedom from acetonuria, provided of course that the diet is a maintenance diet, etc. Food mixtures that contain carbohydrate, protein and fat in such proportion that the fat equals twice the carbohydrate plus half the protein are capable of yielding 17 calories per gram of glucose. For example, take 20 Gm. of carbohydrate, 20 Gm. of protein, and 50 Gm. of fat. It will be seen that twice the carbohydrate is 40, and half the protein 10, and that 40 + 10 is 50, so that the fat equals twice the carbohydrate plus half the protein. Now, such a mixture will yield in calories 4 × 20, or 80, + 4 × 20, or 80, + 9 × 50, or 450; total, 610 calories. If the glucose yielding power of this mixture is estimated as equal to all the carbohydrate plus 0.58 times the protein plus 0.1 times

the fat, it will be found to be 20 + 11.6 + 5; total, 36.6 Gm. of glucose. Dividing the calories, 610 by 36.6 gives in round numbers 17. Woodyatt did not maintain that every diabetic diet should necessarily be so balanced that the ratio of fatty acids to glucose should be 1.5:1 in practical therapeutics. He stated that for an average person on a maintenance diet this was about as high as the ratio could be without causing acetonuria, and that maintenance diets in which the ratio of fatty acids to glucose was 1.5:1 were "optimal" in the sense that they introduced into the body the largest number of calories for the smallest number of grams of glucose compatible with freedom from abnormal acetonuria. Whether or not the feeding of diets capable of causing acetonuria continuously is desirable or not is a question to be decided on the basis of practical experience rather than on the basis of any theory. As a matter of fact, diets of maintenance magnitude for patients at work which contain fat in excess of twice the carbohydrate plus half the protein will usually be found unpractical in this country for the simple reason that such diets make menus difficult to execute. Eskimos or people living in Scandinavian countries may relish diets containing fat in larger proportions than this equation calls for, but in the United States comparatively few people will long submit without complaint to diets in which the fat is run up so high. Another practical point to consider in this connection is the possibility that when persons are on full diets containing higher percentages of fat than this, the occurrence of any cold, accident, or intercurrent illness may throw them into a dangerous degree of acidosis more abruptly than would be the case with diets lower in fat. It may be recalled that ordinary cow's milk contains carbohydrate, protein and fat in the proportion of 5, 3 and 3. Twice the carbohydrate plus half the protein would be 11½. So milk, the natural food of the child, has an FA:G ratio far below 1.5:1.

3. This question is probably based on a misunderstanding. There is no specifiable glucose requirement for all individual cases.

THE RECORDING OF NEAR VISION

To the Editor:—A man, aged 50, has 20/20 vision in each eye. At the near point he reads print marked D = 1.50; on the near test type he accepts + 2.00 sphere for his reading lenses. How would I record his near vision on the examination blanks with and without lenses? (Kindly omit my name.)

M.D., Nebraska.

ANSWER.—Near vision is usually recorded in terms of the Jaeger reading chart. The reading type that is marked 0.50 D equals Jaeger 1; 0.75 D, Jaeger 2; 1.00 D, Jaeger 3; 1.25 D, Jaeger 4; 1.50 D, Jaeger 5; 2.00 D, Jaeger 6. Hence, the record of this patient should read:

R. V. = 20/20. Jg. 5. Add + 2.00 sph. = Jg. 1
L. V. = 20/20. Jg. 5. Add + 2.00 sph. = Jg. 1.

However, the endeavor is being made by the Committee on Compensation for Eye Injuries, appointed by the Section on Ophthalmology of the American Medical Association, to record near vision on the same basis as far vision. The distance for near vision is accepted as 14 inches, exactly as the distance for far vision is accepted as 20 feet. The committee is publishing a test type chart for near vision in which the record will be made in ratios of 14, exactly as far vision is recorded on ratios of 20. So near vision will eventually be recorded as 14/14, 14/21, 14/35, etc., there being the same angular variation on the retina for the various sized types as there is for the various sized Snellen charts for far vision.

RESTRICTIONS ON SALE OF BARBITAL

To the Editor:—We are at this time having a flurry in this city on the subject of veronal, which has been promoted to some extent by the newspapers, which are giving publicity to the alleged bad effects of this drug. Various cases have been used as examples in the public press which are so different in their nature from the supposed action of veronal that public opinion is becoming more or less influenced against it. Stories of "veronal addicts" becoming raving mad, tearing their clothes from their bodies, pleading for the sake of humanity to be chained up or anything done to them that will take away the craving of the horrible drug are becoming quite popular, and there is serious talk of legislation to prohibit the sale of veronal. It is believed that to restrict veronal is a somewhat foolish procedure, and in order that some data may be had concerning its properties and effects, I would be thankful if you will furnish me with any information that you may have on this subject. I am particularly interested in veronal antidotes, the action of the drug in connection with whisky or when taken in connection with morphin, heroin, cannabis indica, opium or any of the opium derivatives.

H. R. B., Knoxville, Tenn.

ANSWER.—We have been unable to find any record of the regulation by law, in the United States, of the sale of barbital. The advisability of such regulation was discussed in an editorial in the *British Medical Journal*, Jan. 17, 1925, and reproduced in THE JOURNAL, Feb. 7, 1925, pages 465-466. The promiscuous sale of barbital (veronal) and derivatives is prohibited in Germany (Austr. Roy. Com. Rep. **1**:454). In England its sale is somewhat restricted by being placed in the poison schedule, and the British home secretary is considering further restrictions. While no laws against the sale of barbital have been passed in the United States, the New York Sanitary Code prohibits the sale of barbital and derivatives without a prescription. The following appears in Useful Drugs: "Many cases of poisoning, some fatal, occur from its indiscriminate use by the laity."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.

CALIFORNIA. Los Angeles, March 8-11. Sec., Dr. Charles B. Pinkham, *Room 906, Forum Bldg., Sacramento.*

CONNECTICUT: Basic Science Board, New Haven, Feb. 13. Chairman, Mr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, Hartford, March 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Board, New Haven, March 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

KANSAS: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, March 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord

NEW YORK: Albany, Buffalo, New York, Syracuse, Jan. 25-28. Chief, Mr. Herbert J. Hamilton, Department of Education, Albany.

OKLAHOMA: Oklahoma City, March 9-10. Sec., Dr. J. M. Byrum, Shawnee.

PENNSYLVANIA: Philadelphia, Jan. 26-30. Act. Sec., Mr. C. D. Koch, Harrisburg.

PHILIPPINE ISLANDS: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

PORTO RICO: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.

VERMONT: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

Washington September Reciprocity Meeting

Mr. William Melville, director, Department of Licenses, State of Washington, reports that 31 candidates were licensed by reciprocity at a meeting held at Olympia, Sept. 28, 1925. The following colleges were represented:

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1916)	Oklahoma
College of Phys. and Surgs., Chicago..(1891) Oregon,	(1902)	Missouri
Northwestern University Medical School......(1924),	(1925)	Illinois
Keokuk Medical College, Coll. of Phys. and Surgs.	(1908)	Iowa
State University of Iowa College of Medicine	(1922)	Iowa
University of Louisville School of Medicine	(1907)	Kansas
Kentucky, (1908) Montana, (1921) Idaho		
Tulane University of Louisiana School of Medicine	(1919)	Mississippi
Baltimore Medical College	(1903)	Montana
Harvard University	(1908)	Nebraska
University of Michigan Medical School	(1906)	Montana
University of Minnesota Medical School	(1924)	Minnesota
St. Louis College of Physicians and Surgeons	(1923)	Colorado
St. Louis University School of Medicine......(1906),	(1912)	Missouri
(1924) Wisconsin		
Washington University School of Medicine	(1911)	Illinois
John A. Creighton Medical College	(1921)	Nebraska
Lincoln Medical College, Lincoln	(1916)	Nebraska
University of Nebraska College of Medicine	(1921)	Nebraska
Medical College of Ohio, Cincinnati	(1889)	Montana
University of Oregon Med. School....(1923) Ilinois,	(1924)	Oregon
University of Pennsylvania School of Medicine	(1915)	California
University of Pittsburgh School of Medicine	(1901)	Penna.
Lincoln Memorial University Med. Dept., Knoxville	(1913)	Tennessee
Baylor University College of Medicine	(1913)	Oregon

Colorado October Examination

Dr. David A. Strickler, secretary of the Colorado Board of Medical Examiners, reports the written examination held at Denver, Oct. 6, 1925. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 11 candidates who took the physicians' and surgeons' examination, 7, including 1 undergradu-

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5. "With the establishment of the paralysis, the cells disappear entirely. The number of cells per cubic millimeter, in the average case and at twenty-four hours, would safely be put at 350, . . . below 100 is very unusual and might be interpreted as occurring in a very mild case or at the end of a preparalytic period."

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Concerning the 46 per cent of fatty acids, it may be said that protein contains none of the higher fatty acids to begin with, nor does it in the course of its metabolism yield any higher fatty acids whatever. Protein in the course of its digestion in the alimentary tract yields a medley of amino-acids, and certain of these amino-acids when metabolized in the body are capable of yielding acetoacetic or beta-hydroxybutyric acid. One molecule of a certain amino-acid, such as tyrosine, leucine or phenylalanine, has been shown to be capable of yielding one molecule of acetoacetic or beta-hydroxybutyric acid. Now, one molecule of a higher fatty acid, such as palmitic or stearic acid, is also capable in the course of its oxidation in the body of yielding one molecule of acetoacetic or beta-hydroxybutyric acid. Therefore, in respect of its power to yield acetoacetic or beta-hydroxybutyric acid, one molecule of one of the amino-acids in question is the equivalent of one molecule of higher fatty acids. The quantities of these amino-acids found by analyses in muscle protein by Osborn form the basis for the proposition that protein in the course of its catabolism is capable of liberating as much acetoacetic or beta-hydroxybutyric acid as though it contained 46 per cent of its weight in higher fatty acids. In other words, 100 Gm. of protein is equivalent in ketogenic power to 46 Gm. of higher fatty acids. The equation is intended to express this relationship and not the content of higher fatty acids in protein nor the amount of higher fatty acids produced in the body by the catabolism of protein. As stated above, protein neither contains nor introduces into the body any higher fatty acid in the course of its catabolism.

2. Woodyatt observed that when patients were on diets of such caloric magnitude that in the course of the day all the carbohydrate protein and fat of the diet was catabolized and that no carbohydrate protein or fat was stored and no tissue carbohydrate, protein or fat broken down in addition to that which was given in the diet, then acetone was observed to make its first appearance in the urine in supernormal quantities when the diet was so balanced that the ratio of fatty acids (and ketogenic equivalents) to glucose was in the neighborhood of 1.5 : 1. The fatty acid to glucose ratio of 1.5 : 1 implies a mixture of carbohydrate protein and fat in which the fat equals approximately twice the carbohydrate plus half the protein. That is to say, when the fat of a food mixture equals twice the carbohydrate plus half the protein in the same mixture, the fatty acid to glucose ratio, if figured out, will be found to be a little lower than 1.5 : 1. Diets in which the fat equals twice the carbohydrate, plus half the protein, yield for the average adult the largest amount of ketogenic acids and the lowest amount of glucose compatible with freedom from acetonuria, provided of course that the diet is a maintenance diet, etc. Food mixtures that contain carbohydrate, protein and fat in such proportion that the fat equals twice the carbohydrate plus half the protein are capable of yielding 17 calories per gram of glucose. For example, take 20 Gm. of carbohydrate, 20 Gm. of protein, and 50 Gm. of fat. It will be seen that twice the carbohydrate is 40, and half the protein 10, and that 40 + 10 is 50, so that the fat equals twice the carbohydrate plus half the protein. Now, such a mixture will yield in calories 4 × 20, or 80, + 4 × 20, or 80, + 9 × 50, or 450; total, 610 calories. If the glucose yielding power of this mixture is estimated as equal to all the carbohydrate plus 0.58 times the protein plus 0.1 times

the fat, it will be found to be $20 + 11.6 + 5$; total, 36.6 Gm. of glucose. Dividing the calories, 610 by 36.6 gives in round numbers 17. Woodyatt did not maintain that every diabetic diet should necessarily be so balanced that the ratio of fatty acids to glucose should be 1.5:1 in practical therapeutics. He stated that for an average person on a maintenance diet this was about as high as the ratio could be without causing acetonuria, and that maintenance diets in which the ratio of fatty acids to glucose was 1.5:1 were "optimal" in the sense that they introduced into the body the largest number of calories for the smallest number of grams of glucose compatible with freedom from abnormal acetonuria. Whether or not the feeding of diets capable of causing acetonuria continuously is desirable or not is a question to be decided on the basis of practical experience rather than on the basis of any theory. As a matter of fact, diets of maintenance magnitude for patients at work which contain fat in excess of twice the carbohydrate plus half the protein will usually be found unpractical in this country for the simple reason that such diets make menus difficult to execute. Eskimos or people living in Scandinavian countries may relish diets containing fat in larger proportions than this equation calls for, but in the United States comparatively few people will long submit without complaint to diets in which the fat is run up so high. Another practical point to consider in this connection is the possibility that when persons are on full diets containing higher percentages of fat than this, the occurrence of any cold, accident, or intercurrent illness may throw them into a dangerous degree of acidosis more abruptly than would be the case with diets lower in fat. It may be recalled that ordinary cow's milk contains carbohydrate, protein and fat in the proportion of 5, 3 and 3. Twice the carbohydrate plus half the protein would be 11½. So milk, the natural food of the child, has an FA:G ratio far below 1.5:1.

3. This question is probably based on a misunderstanding. There is no specifiable glucose requirement for all individual cases.

THE RECORDING OF NEAR VISION

To the Editor:—A man, aged 50, has 20/20 vision in each eye. At the near point he reads print marked $D = 1.50$; on the near test type he accepts $+ 2.00$ sphere for his reading lenses. How would I record his near vision on the examination blanks with and without lenses? (Kindly omit my name.)

M.D., Nebraska.

Answer.—Near vision is usually recorded in terms of the Jaeger reading chart. The reading type that is marked 0.50 D equals Jaeger 1; 0.75 D, Jaeger 2; 1.00 D, Jaeger 3; 1.25 D, Jaeger 4; 1.50 D, Jaeger 5; 2.00 D, Jaeger 6. Hence, the record of this patient should read:

R. V. = 20/20. Jg. 5. Add + 2.00 sph. = Jg. 1
L. V. = 20/20. Jg. 5. Add + 2.00 sph. = Jg. 1.

However, the endeavor is being made by the Committee on Compensation for Eye Injuries, appointed by the Section on Ophthalmology of the American Medical Association, to record near vision on the same basis as far vision. The distance for near vision is accepted as 14 inches, exactly as the distance for far vision is accepted as 20 feet. The committee is publishing a test type chart for near vision in which the record will be made in ratios of 14, exactly as far vision is recorded on ratios of 20. So near vision will eventually be recorded as 14/14, 14/21, 14/35, etc., there being the same angular variation on the retina for the various sized types as there is for the various sized Snellen charts for far vision.

RESTRICTIONS ON SALE OF BARBITAL

To the Editor:—We are at this time having a flurry in this city on the subject of veronal, which has been promoted to some extent by the newspapers, which are giving publicity to the alleged bad effects of this drug. Various cases have been used as examples in the public press which are so different in their nature from the supposed action of veronal that public opinion is becoming more or less influenced against it. Stories of "veronal addicts" becoming raving mad, tearing their clothes from their bodies, pleading for the sake of humanity to be chained up or anything done to them that will take away the craving of the horrible drug are becoming quite popular, and there is serious talk of legislation to prohibit the sale of veronal. It is believed that to restrict veronal is a somewhat foolish procedure, and in order that some data may be had concerning its properties and effects, I would be thankful if you will furnish me with any information that you may have on this subject. I am particularly interested in veronal antidotes, the action of the drug in connection with whisky or when taken in connection with morphin, heroin, cannabis indica, opium or any of the opium derivatives.

H. R. B., Knoxville, Tenn.

Answer.—We have been unable to find any record of the regulation by law, in the United States, of the sale of barbital. The advisability of such regulation was discussed in an editorial in the *British Medical Journal*, Jan. 17, 1925, and reproduced in The Journal, Feb. 7, 1925, pages 465-466. The promiscuous sale of barbital (veronal) and derivatives is prohibited in Germany (Austr. Roy. Com. Rep. **1**:454). In England its sale is somewhat restricted by being placed in the poison schedule, and the British home secretary is considering further restrictions. While no laws against the sale of barbital have been passed in the United States, the New York Sanitary Code prohibits the sale of barbital and derivatives without a prescription. The following appears in Useful Drugs: "Many cases of poisoning, some fatal, occur from its indiscriminate use by the laity."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.

California: Los Angeles, March 8-11. Sec., Dr. Charles B. Pinkham, Room 906, Forum Bldg., Sacramento.

Connecticut: Basic Science Board, New Haven, Feb. 13. Chairman, Mr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, Hartford, March 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Board, New Haven, March 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Kansas: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

Maine: Portland, March 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Massachusetts: Boston, March 9-11. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

National Board of Medical Examiners: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

New Hampshire: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

New York: Albany, Buffalo, New York, Syracuse, Jan. 25-28. Chief, Mr. Herbert J. Hamilton, Department of Education, Albany.

Oklahoma: Oklahoma City, March 9-10. Sec., Dr. J. M. Byrum, Shawnee.

Pennsylvania: Philadelphia, Jan. 26-30. Act. Sec., Mr. C. D. Koch, Harrisburg.

Philippine Islands: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

Porto Rico: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.

Vermont: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

Wyoming: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

Washington September Reciprocity Meeting

Mr. William Melville, director, Department of Licenses, State of Washington, reports that 31 candidates were licensed by reciprocity at a meeting held at Olympia, Sept. 28, 1925. The following colleges were represented:

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1916)	Oklahoma
College of Phys. and Surgs., Chicago..(1891) Oregon,	(1902)	Missouri
Northwestern University Medical School......(1924),	(1925)	Illinois
Keokuk Medical College, Coll. of Phys. and Surgs.	(1908)	Iowa
State University of Iowa College of Medicine	(1922)	Iowa
University of Louisville School of Medicine	(1907)	Kansas
Kentucky, (1908) Montana, (1921) Idaho		
Tulane University of Louisiana School of Medicine	(1919)	Mississippi
Baltimore Medical College	(1903)	Montana
Harvard University	(1908)	Nebraska
University of Michigan Medical School	(1906)	Montana
University of Minnesota Medical School	(1924)	Minnesota
St. Louis College of Physicians and Surgeons	(1923)	Colorado
St. Louis University School of Medicine......(1906),	(1912)	Missouri
(1924) Wisconsin		
Washington University School of Medicine	(1911)	Illinois
John A. Creighton Medical College	(1921)	Nebraska
Lincoln Medical College, Lincoln	(1916)	Nebraska
University of Nebraska College of Medicine	(1921)	Nebraska
Medical College of Ohio, Cincinnati	(1889)	Montana
University of Oregon Med. School....(1923) Ilinois,	(1924)	Oregon
University of Pennsylvania School of Medicine	(1915)	California
University of Pittsburgh School of Medicine	(1901)	Penna.
Lincoln Memorial University Med. Dept., Knoxville	(1913)	Tennessee
Baylor University College of Medicine	(1913)	Oregon

Colorado October Examination

Dr. David A. Strickler, secretary of the Colorado Board of Medical Examiners, reports the written examination held at Denver, Oct. 6, 1925. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 11 candidates who took the physicians' and surgeons' examination, 7, including 1 undergraduate and 1 osteopath, passed, and 4 failed. Twenty-two candidates were licensed by reciprocity. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent
Eclectic Medical University, Kansas City	(1918)	75
Kansas City University of Physicians and Surgeons	(1925)	79.5
St. Louis University School of Medicine	(1925)	86.4
Jefferson Medical College of Philadelphia	(1923)	90
University of Toronto Faculty of Medicine	(1922)	86.5
Undergraduate		78.8
Osteopath		81.4

College — FAILED	Year Grad.	Per Cent
St. Louis College of Physicians and Surgeons	(1922)	66.4,
(1923) 65.4, (1924) 64, (1925) 62.9		

College — LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists	(1924)	California
College of Physicians and Surgeons, Chicago	(1905)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1899)	Illinois
Northwestern University Medical School	(1924)	Illinois
Rush Medical College	(1886)	Wisconsin
Indiana University School of Medicine	(1912)	Indiana
Keokuk Medical College, Coll. of Phys. and Surgs.	(1903)	Iowa
Hospital College of Medicine, Louisville	(1900)	Indiana
Harvard University	(1919)	Mass.
University of Minnesota Medical School	(1921)	Minnesota
Missouri Medical College	(1882)	Missouri
University Medical College of Kansas City	(1900)	Oklahoma
University of Nebraska College of Med.	(1914), (1924, 2)	Nebraska
Eclectic Medical College, Cincinnati	(1896)	Illinois
University of Cincinnati College of Medicine	(1924)	Ohio
Meharry Medical College	(1908)	Georgia
University of Tennessee College of Medicine	(1913)	Tennessee
Vanderbilt University School of Medicine	(1912)	Tennessee
Medical College of Virginia	(1904)	Virginia
University of Virginia Department of Medicine	(1920)	Louisiana

Book Notices

Otologic Surgery. By Samuel J. Kopetzky, M.D., F.A.C.S., Professor of Otology, Polyclinic Medical School and Hospital, New York. Cloth. Price, $8. Pp. 539, with 127 illustrations. New York: Paul B. Hoeber, Inc., 1925.

This book opens with a detailed classification of middle ear diseases based on their pathogenesis. The term "catarrh, having the sanction of usage, is retained; it is simply the name given to a series of physical and mechanical processes that occur in the middle ear and find their origin in factors situated elsewhere than in the tympanic cavity." The pathologic findings in mastoiditis are well described and illustrated with photomicrographs. In the second chapter, operative procedure in the external auditory canal is discussed. Chapter III deals with the incision of the membrana tympani (paracentesis). The author condemns the use of suction after paracentesis. In chapter IV the operations on the middle ear by way of the external auditory meatus are considered. Ossiculectomy and the indications are discussed in detail, and likewise the removal of aural polyps. The simple mastoid operation is considered in chapter V. In chapter VI, the radical mastoid operation is discussed. Several operations are described which have for their purpose the closure of persistent postauricular openings. In chapter VII is found surgery of the labyrinth, together with the classification of purulent labyrinthitis. Various vestibular tests are described and discussed. Among the operations on the labyrinth described in this chapter are those of Richards, Hinsberg and Naumann. Chapter VIII deals with otogenous systemic infections, including sinus thrombosis. There is a complete discussion of the indications for jugular ligation and resection. Tobey and Aver's test for determining the presence or absence of thrombosis of the lateral sinus by means of changes in the manometric pressure of the spinal fluid when one or both internal jugulars are compressed is not given. This is no doubt due to the fact that this test appeared about May, 1925, and at this time, the manuscript of the book had no doubt been completed. Surgery of the meninges is considered in chapter IX, and the Haynes-Kopetzky operation and Eagleton's irrigation described. Surgery of otitic brain abscesses is found in chapter X. In chapter XI the laboratory aids to otologic diagnosis are given, and especial attention is called to the relation between the white blood count and the percentage of polymorphonuclears. Many interesting and valuable cases illustrating points in the text are given in the concluding chapter. The book is well written; with each subject a good historical review of the development is presented, and at the end of each chapter a complete bibliography is included. The subjects are presented in a logical way, with a great deal of attention given to pathology. The book is a valuable addition to otologic literature and should prove popular among otologists.

Pneumonia, Its Pathology, Diagnosis, Prognosis and Treatment. By the late R. Murray Leslie, M.A., B.Sc., M.D. Edited by J. Browning Alexander, M.D., M.R.C.P. Physician with charge of outpatients, City of London Hospital for Diseases of the Chest. Cloth. Price, 12 shillings 6 pence net. Pp. 351. London: William Heinemann, Ltd., 1924.

This is an interesting and readable book for one who wishes to review the subject of pneumonia. Many facts both clinical and experimental, including most of the important ones, are brought together in this single volume, which is light, well printed, and easy to read. The author presents the subject of typical lobar pneumonia, discussing the etiology, pathology, symptomatology and treatment in adequate detail to cover the subjects, following which he takes up the less classic forms, such as bronchopneumonia, influenzal pneumonia, pneumonia in children, and postoperative pneumonia, in less detail. The final chapters deal with specific vaccine and serum therapy. It is interesting to note that while the author and the editor are English, the facts regarding experimental work on pneumonia have been drawn almost exclusively from American sources. The reports of the Rockefeller Foundation are made use of freely in this regard, and it is evident that Leslie was much influenced by their conclusions regarding the practical value of typing the pneumococcus in any specific case, and treating the case with specific pneumococcus serum. Furthermore, he seems to have had considerable faith in the value of specific vaccine, or even stock vaccine, in the treatment of pneumonia, in this regard being influenced greatly by the work of Sir Almroth Wright. Undoubtedly he shared with most of the medical world of the time a hope that such treatment would prove efficacious. However, since his death the faith in serum and vaccine treatment has somewhat subsided, and the editor has had to revise the original manuscript to conform to a more moderate view as to the value of these agents.

Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie. Ein Handbuch für Aerzte. II. Band, I. Teil. Von Professor Ad. Czerny und Professor A. Keller. Second Edition. Paper. Price, 18 marks. Pp. 368. Leipsic: Franz Deuticke, 1925.

This volume contains the authors' classification of the nutritional diseases of infancy. They retain their original division into three groups; namely, nutritional disturbances of alimentary origin, nutritional disturbances due to infection, and nutritional disturbances due to defects in the constitution and in the structure of the body. In addition to the well known food injuries that the authors have previously described, such as those produced by milk, fat and starch, they now consider in some detail the protein injuries. They believe that in weakly or premature infants it is possible to give protein in excess, i. e., to give an amount of protein that exceeds the nutritional requirements of the infant, and that nutritional disturbances are observed in such cases. On the other hand they recognize that in some instances infants, particularly those that are ill, receive too little protein. This occurs particularly in infants that are receiving greatly diluted milk. The authors consider also infantile scurvy and scurvy of older children. They relate that in Berlin in 1901 and 1902 there was a marked increase in infantile scurvy and that this increase occurred concomitantly with the introduction of pasteurization in one of the largest dairies of the city. In most instances the pasteurized milk was reboiled when it came into the home, and the authors think that this was significant in the production of infantile scurvy. There was a striking increase in the disease during 1917 and 1918, and this they thought was caused by the deficiency in fresh vegetables and the poor quality of the milk. A number of factors contributed to the deficiency of vitamins in the milk. The cattle were being fed on fodder that contained little of the accessory food substances. The milk was being obtained under insanitary conditions, and hydrogen peroxid or alkalis were being added to the milk. Peroxids and alkalis tend to decrease the vitamin content and predispose the infant fed on milk containing them to scurvy. Keratomalacia is considered in some detail, and the entire literature of the subject is reviewed. The abnormal fragility of bones or osteopsathyrosis is considered, with particular relation to the diet. A chapter is devoted to the milk disturbances in breast-fed infants. Overfeeding at the breast is considered, and it is pointed out that the baby who is nursing reasonably well receives the greater portion of his meal during the first ten minutes. To place a baby on artificial feeding because the breast milk is disagreeing with him is considered unwise, for experience teaches that in most instances in which the breast milk disagrees, artificial food will be equally unsuccessful. Occasionally artificial food seems to agree better than breast milk, but those who favor the substitution of artificial for natural food, base their opinions on apparent results in the bottle-fed baby. The stools have a better consistency, and the babies increase more in weight. But these clinicians do not take into consideration the development of the static functions, the immunity against infection and the general developmental condition. The book contains a mine of information and reflects a critical search of the literature and the vast experience of the authors. Detailed chapters are written on the alimentary toxicoses, enteral infections and parenteral infections. A considerable space is devoted to a review of the pathologic examination of the alimentary tract of children who have died of nutritional disturbances during the first year. Briefly summarizing, the authors say that the present view of pathologic-anatomic lesions in the nutritional disturbances of infants is that the changes are functional in character. Only rarely do anatomic lesions occur, and these are usually due to some complication. For those who are interested in the feeding, nutrition and alimentary disorders of infancy and childhood, these volumes of Czerny and Keller are invaluable; they deserve the thoughtful consideration of teachers and practitioners.

SCIENTIFIC NUTRITION IN INFANCY AND EARLY CHILDHOOD. For the Student and General Practitioner. By Stafford McLean, M.D., Associate in Diseases of Children, College of Physicians and Surgeons, Columbia University, and Helen L. Fales, B.S. Cloth. Price, $3.75. Pp. 404. Philadelphia: Lea & Febiger, 1925.

Clinical and laboratory points of view represented by the authors have combined to give a clear and logical exposition of the subject. The control conscience is illustrated in their insistence on the fundamental considerations of food requirements, qualitative and quantitative, together with normal digestion and breast feeding. On the basis of this norm, the discussion of artificial feeding follows with explanations for the indications and uses of the various preparations. In this manner are considered top, skimmed, concentrated, dried, acid and protein milks, thick feedings, butter flour mixtures and proprietary foods. The diet of later infancy and early childhood is given in detail. The experience of the authors and the practical application of the book are indicated by the title of a subdivision in the chapter on stools, "Misleading Information Derived From Unrelated Stool Examinations." Deviations from the normal nutritional state are discussed from the standpoints of disturbances of the digestive tract and other conditions associated with disturbed nutrition. There is offered a simple classification of digestive tract disturbances. Associated with disturbed nutrition are considered marasmus, premature and debilitated infants, rickets, hypertrophic pyloric stenosis and nervous children. Especially useful for the nutritional worker are appended recipes, tables of composition and values of foods and tables for calculating the values of diets. The work should prove useful to all concerned in the supervision of infancy and childhood, the nutritional worker, dietitian, general practitioner and specialist. To the specialist it will appeal best as a concise and scientific summary coupled with personal views and observations of experienced observers. Like the recent series of simple expositions of world history, literature and art, this book is written at the beginner to be read by the mature.

Medicolegal

Care Required for Delirious or Irrational Patients

(Fetzer v. Aberdeen Clinic et al. (S. D.), 204 N. W. R. 364)

The Supreme Court of South Dakota, in affirming a judgment for the defendants, says that they were the Aberdeen Clinic, which was an association of physicians and surgeons who patronized a certain hospital; the Clinic Building Corporation, which owned and operated the hospital; and a physician who was a member of the Aberdeen Clinic and a stockholder and officer of the Clinic Building Corporation. The physician sent the plaintiff to the hospital and performed an appendectomy on him. The plaintiff's action was to recover damages for injuries which he sustained by having fallen or jumped from the window of a room on the third floor of the hospital, on the morning of the sixth day after the operation.

The jury was instructed to the effect that the degree of care and diligence required is measured both by the mental incapacity of the patient and by the dangers which the surroundings indicate may befall such a patient in view of any peculiar mental traits exhibited by the patient. This is always limited by the unbending rule that no one is required to guard against or take measures to avert that which a reasonable person under the circumstances would not anticipate as likely to happen. These circumstances include the patient's mental condition and aberrations and what he is likely to do by reason thereof. That a patient may be delirious or not in control of his mental faculties is not sufficient to put the defendant, its agents, servants or employees, on their guard to prevent self-inflicted injury. It is only when they have notice of conduct or language on the part of the patient evidencing an hallucination or a purpose to inflict such injuries, and in this case, unless the defendants, their agents, servants and employees had notice or knowledge of conduct or condition of mind on the part of the plaintiff which indicated that he intended self-injury or self-destruction, or intention to escape from the building, he could not recover in this action. While there are decisions affirming judgments for damages on claims somewhat similar to the case at bar, and other decisions denying liability in cases varying but little therefrom, there seems to be no material divergence from the rule laid down in this instruction.

It is evident that in this case, and in all similar cases, the injuries complained of are directly due to the acts of the person suffering the injuries. Under the general rule of law, the contributory negligence of the injured person would bar any recovery on his part or on the part of his representatives. It is only on the theory that the incapacity of the person injured removes his case from the general rule that any recovery can be had. Evidently, then, the burden is clearly on those seeking to be relieved from this general rule to show such incapacity, and notice thereof to those sought to be charged. And it is further evident that this notice of the condition of the patient must be such as to give those sought to be charged reason to believe that his doing injury to himself may be anticipated. To hold hospitals, nurses or physicians responsible for injuries which patients may inflict on themselves, unless the patients have given evidences of the probable danger of such infliction of injury, would be a harsh rule.

The defendant physician as an officer, member of the surgical staff, or employee of the Clinic Building Corporation, which owned and operated the hospital, would not be liable personally, but any negligence on his part in such capacity might be imputed to his principal, the corporation. Still he would be personally liable for any negligence in performing any of the duties that he owed to the plaintiff as his personal physician and surgeon.

The defendant physician was allowed to testify that, when he examined the plaintiff shortly before the accident, there was nothing in the plaintiff's conversation, appearance or demeanor that from the witness's knowledge and judgment as a physician would cause him to anticipate that the patient would attempt to do himself harm, or that, in the witness's experience or judgment, would require or reasonably need any care or treatment other than that he was receiving. These items of testimony were objected to as conclusions, and as invading the province of the jury. They were conclusions, but the witness was being sued as a physician required to furnish the skill, knowledge and care usually exercised by physicians and surgeons. He was qualified to testify as a medical expert, and as such had the same right to testify as to his conclusions that any other expert would have. There was no error in admitting this evidence. The jury, of course, had the right to weigh his evidence as it would that of any other witness, taking into consideration also his interest in the suit.

Death from Dementia Paralytica Result of Syphilis

(Rodgers v. National Life & Accident Ins. Co. (Mo.), 272 S. W. R. 1052)

The St. Louis (Mo.) Court of Appeals holds that, since the insurance policy issued by the defendant on which it was sued in this case provided that no benefits should be paid for sickness or death "resulting from venereal diseases," it was error for the trial court to refuse to instruct the jury that if it found and believed from the evidence that the insured died from dementia paralytica, and that the disease was caused from syphilis, and that syphilis is a venereal disease, then its verdict should be for the defendant. The court of appeals says that the plaintiff contended that the provision of the policy referred to did not exempt the company when the insured died from a disease caused by a prohibited disease; that, if the requested instruction was correct, the defendant would be exempt from liability for a death caused by a disease if the disease was in turn caused remotely or proximately by syphilis. But to give the policy such a construction as the plaintiff contended for would be an injustice, and would be in violation of its plain and positive terms. There was evidence in the record that the insured died from dementia paralytica, and that such a condition or disease is caused exclusively by syphilis, and that syphilis is a venereal disease. Under such a state of facts, if they be true, the defendant was not liable, under the plain terms and provisions of the policy.

Physician as Witness After Treating Man in Jail

(State v. Moore (N. D.), 204 N. W. R. 341)

The Supreme Court of North Dakota, in reversing a judgment of conviction of rape on the ground of error in the admission in evidence of the testimony of a physician as to the result of an examination which he made of the defendant in jail, says the sheriff had received rumors to the effect that the defendant was afflicted with a venereal disease. Accordingly, the sheriff called the physician to examine the man in order that, if the latter was so affected, he might protect himself as well as the prisoners. The physician testified that he went there for the purpose of treating the man professionally if he was infected, and that he told the man that his understanding of the law was that, if he made the examination, he could not divulge the knowledge that he gained. He subsequently treated the man. The state sought to justify the admission of the physician's evidence on the ground that the physician was not called for the purpose of treating the defendant, but for the purpose of protecting the sheriff and those under his charge against contagious diseases pursuant to a power possessed by him under state health regulations; that the defendant voluntarily consented to the examination; and that, in any event, the testimony received did not show that the defendant was entitled to the statutory exemptions concerning a privileged communication, for the prime reason that the testimony concerned was not obtained in order to enable the physician to prescribe or act for the defendant as his patient, and for the secondary reason that the statute of that state which provides that a physician or surgeon cannot, without the consent of his patient, be examined as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient, is not applicable in criminal actions. However, the supreme court (divided three to two) is of the opinion that the trial court erred in receiving the physician's testimony concerning the defendant's examination, made while he was in custody, and that the state's position on the record could not be justified. The record was insufficient to justify any inference that the defendant voluntarily consented to his examination so as to waive the protection of the statute. The physician's testimony, taken in connection with the sheriff's, disclosed that the physician attended the defendant as his patient, and, from information gained by his examination, he thereafter prescribed and acted for the defendant as his patient. The physician's statements to the defendant served to indicate to him that the consultation would be of a professional character. The situation was not similar to that of a case in which a physician was called to examine a defendant while in custody and the latter was told that the physician had been sent by the prosecuting attorney for the specific purpose of examination, nor to a situation in which a physician testifies concerning an admission made by a defendant in a nonprofessional transaction or occurrence. It will serve no useful purpose to consider the beneficent or harmful results of the statute in either protecting the rights of liberty or inhibiting proofs of crime. The statute is mandatory in its character. It is the duty of courts to apply this statute when facts evidence themselves to justify its application.

Answers as to Medical Consultations and Treatment

(Shaughnessy v. New York Life Ins. Co. (Minn.), 203 N. W. R. 600)

The Supreme Court of Minnesota holds that it is the duty of an applicant for life insurance to give truthful answers to questions relative to medical consultations and treatment. Such matters are material to the risk, and, if the answers are false, the policy may be voided. But the rule does not require the disclosure of consultations or treatment for slight or temporary ailments. When a misrepresentation materially affecting the risk is made, it is unimportant whether it was accompanied by an intent to deceive, for, under the Minnesota statute, a recovery on the policy is barred, although no fraud or deception was practiced or intended. To attribute to the insurer information given to a soliciting agent, the information must have been imparted to the agent in the course of his agency. Inquiries respecting the health of the applicant, his previous or existing ailments, and consultations and attendance by physicians, are beyond the scope of the functions of an agent who merely solicits insurance; they pertain to matters dealt with by the medical examiner. For this reason, the knowledge which a soliciting agent may have possessed concerning these matters is not attributable to the insurance company.

Injured Employee Selecting Physician and Hospital

(Indiana Liberty Mut. Ins. Co. et al. v. Strate (Ind.), 148 N. E. R. 425)

The Appellate Court of Indiana, division no. 1, says that Strate, an injured employee who was a claimant for compensation under the workmen's compensation act, was removed to Indianapolis in order that he might have the medical and surgical treatment of a specialist. There was evidence tending to prove that prior to such removal it was agreed between him and the insurance carrier that at Indianapolis he should have the services of a specialist who had been recommended by his local physician, and that he agreed to the removal with that understanding, whereas on his arrival in Indianapolis a representative of the insurance carrier informed him that he was to be taken to a certain hospital and there examined and treated by a different physician. Dissatisfied with that arrangement, within an hour after being taken to the hospital, and before examination there by the insurance carrier's physician, he, on his own account, employed the specialist he desired, to take sole charge of his case, and caused himself to be transferred to another hospital, where he was thereafter treated by that specialist.

On account of the man's refusal to accept the services of the physician and the hospital tendered, the insurance carrier refused on behalf of itself and the employer to make further payments of compensation, it being contended that as he had refused to submit himself to examination by the physician, and had refused to accept the hospital services tendered, the case came within the provision of the workmen's compensation act suspending the right of compensation pending the refusal on the part of an injured employee to submit to examination by a physician designated by the employer. But under the provision referred to the employee is not required to submit to an examination at any time or place designated by the employer. The requirement is "at reasonable times and places." Indianapolis was 130 miles from the place of the man's residence. Whether, under the facts of this case, Indianapolis was a reasonable place for the examination of the injured employee by the insurance carrier's physician would have been a question of fact for the industrial board. Furthermore, under the statute, the right to compensation is suspended "unless in the opinion of the industrial board the circumstances justify the refusal." Under the circumstances shown by the evidence, the justification of the refusal to submit to the examination was a question of fact for the industrial board, and it found that the refusal was justified, which finding was sustained by competent evidence.

However, the medical and surgical treatment received by the man at Indianapolis was not within the first thirty days after he had received the injury, nor was the treatment or hospital service ordered by the industrial board. He employed the specialist who treated him, and it was he who contracted for the hospital service pending such treatment, the services of the other physician and hospital facilities previously tendered by the employer and the insurance carrier having been refused. This court holds that, under the circumstances, the account of the specialist for his services, and the account for hospital accommodations and service at Indianapolis, were the personal obligations of the injured employee. It followed that the industrial board erred in ordering payment of these by the employer.

Mental Incompetence and Guardianship

(In re Keiser (Neb.), 204 N. W. R. 394)

The Supreme Court of Nebraska, in reviewing the appointment of a guardian of the person and estate of an alleged incompetent 79 years of age, says that old age and failure of memory do not, of themselves, establish incompetence to care for ordinary business affairs. The fact that a man is 79 years old, and, by reason of his feeble condition, has not sufficient strength of mind to manage his business with ordinary care and prudence, does not warrant the appointment of a guardian under the provisions of section 1590 of the compiled statutes of Nebraska of 1922, which provides for the appointment of a guardian of the property for a person of unsound mind. No set rule can be enunciated which will be a safe criterion in all cases. It is not sufficient that incompetence alone is established, for it may well be, even where incompetence exists, that the situation and surroundings of the incompetent are such that no necessity exists for the appointment of a guardian, and that no good purpose would be served thereby. The incapacity of a person, which, within the statute, will authorize the appointment of a guardian, is a question of fact in each case for the trial court, whose findings thereon will not ordinarily be disturbed. While the scope of the examination rests in the sound discretion of the court, the examination should be limited to inquiries which have for their object the finding and determination of the mental condition of the subject of the inquiry.

The descriptive words, "mentally incompetent," "incompetent," and "incapable," as used in sections 1589 and 1590 of the compiled statutes, mean any one who, though not insane, is, by reason of old age, disease, weakness of mind, or from any other cause or causes, unable or incapable, unassisted, of properly taking care of himself or managing his property, and by reason thereof would be liable to be deceived or imposed on by artful or designing persons. Mental incompetence or incapacity is established when there is found to exist an essential privation of reasoning faculties, or when a person is incapable of understanding and acting with discretion in the ordinary affairs of life. When a person has insufficient mental capacity for the just protection of his property, and his mental condition is such that he is guided by the will of others instead of his own in its disposition, a guardian should be appointed. In a proceeding for the appointment of a guardian for alleged incompetence because incapable of caring for his property, when the person is a party to the proceeding and has not been adjudged insane, his admissions, declarations and showing of facts inconsistent with mental soundness are admissible as substantive evidence on the issue of sanity.

"Sanity" and "competence to manage an estate" are not synonymous terms. A man may be sane in the sense that it is not necessary to incarcerate him in an asylum and yet be incompetent to manage an estate even though he is not a spendthrift or a drunkard.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

SOUTHERN SURGICAL ASSOCIATION

Thirty-Eighth Annual Meeting, held at Louisville, Ky., Dec. 15-17, 1925

The President, Dr. Irvin Abell, Louisville, Ky., in the Chair

Sinus Pericranii, Stromeyer

Dr. Isidore Cohn, New Orleans: Sinus pericranii, as described by Stromeyer in 1850, included both congenital and acquired lesions. The clinical picture is the same in the two types—a soft, fluctuating, slow growing vascular tumor of the scalp, which communicates directly with an intracranial sinus through an anomalous opening of congenital or acquired origin. These tumors, as a rule, are not evident when the patient is erect. They become prominent on coughing, sneezing, compression of the jugular or any act which increases intracranial pressure, or which interferes with venous return from the skull. The tumor mass is reducible into the skull. A bony defect is evident on palpation. The roentgen ray is invaluable as a diagnostic measure for the anomalous communication is demonstrated beyond question. The endothelial lining of the walls of a tumor differentiates the congenital from the acquired type, which has a connective tissue lining. Surgery is the only rational means of cure.

Mercurochrome-220 Soluble

Dr. Hugh H. Trout, Roanoke, Va.: Given a patient with a positive blood stream infection, in whom all possible foci have been removed, mercurochrome-220 soluble is worth a trial. It gives us one more thing to do in these otherwise hopeless cases, and proves of comfort to the family, if not of benefit to the patient. I do not believe that all the claims made for it as a blood stream sterilizer are as yet proved, and mercurochrome, like any other substance, should not be viewed unadvisedly or lightly.

Torula Infection in Man

Drs. J. L. McGehee and I. D. Michelson, Memphis, Tenn.: Ours is the first case reported in which a torula has been isolated from a negro. A negress, aged 26, admitted to the hospital, Dec. 8, 1924, complained of pain and swelling in the left groin. The onset of the illness was in August, 1924, with a vaginal discharge and dull, aching, pain in the left lower quadrant of the abdomen, radiating down the left leg to the knee, and increased by movement. Sixteen days previous to her admission to the hospital, an intensely painful swelling appeared in the left groin. The patient was confined to bed with pain and high fever. The mass was evacuated and found to contain thick, cream-colored pus. The patient's discomfort was relieved for a few days only, to be followed by high fever lasting seventy-four days. Subjectively and objectively her condition did not justify so high a fever. The picture was suggestive of gonococcemia, but smears and cultures for the gonococcus were negative. The total number of leukocytes was high, but the polymorphonuclears were low and there was a mononuclear increase. Torulae were found in the pus, either lying free or phagocytized by mononuclears. They were grown in pure culture and proved highly pathogenic for experimental animals. The patient recovered.

Surgery on the Tuberculous Patient

Dr. F. Webb Griffith, Asheville, N. C.: Local anesthesia should be used wherever possible. Ether does practically no more harm to the tuberculous than to the nontuberculous lung, and a general ether anesthesia should be employed whenever the necessity arises. Ethylene bids fair to replace ether in these cases. Pulmonary tuberculosis is not a strong contraindication to surgery, and many patients are greatly benefited by the surgical removal of conditions that are indirectly retarding their recovery. Whenever a tuberculous patient becomes pregnant, intervention should be considered. If it is deemed wise to allow the pregnancy to go to full term, well and good. If it is reasonably certain that intervention will be necessary, it should be done early before irreparable damage has been done to the lungs.

Treatment of Deep Roentgen-Ray Burns by Excision and Tissue Shifting

Dr. John Staige Davis, Baltimore: When the ordinary local methods have been tried for a reasonable time in a deep roentgen-ray burn, nothing is gained by delaying operative work. Early excision of deep burns with tissue shifting promises more than any method yet devised, and gives a reasonable prospect of permanent relief in a comparatively short time. Pain is eliminated, in many instances function is restored, and patients who have been incapacitated for years have been returned to their former activities. The *ultimate results have been most gratifying.*

Sterility in the Male

Dr. Francis R. Hagner, Washington, D. C.: Of all the causes of sterility, the principal one is bilateral gonorrheal epididymitis. The globus minor is the portion of the epididymis most involved. The only chance for recovery in such cases lies in the endeavor to overcome the occlusion by an anastomosis of the vas deferens and globus major. I expose the entire epididymis and pick out the portion of the globus major richest in tubules and more likely to contain live spermatozoa. An elliptic piece is exsected from the epididymis. If no spermatozoa are found, the incision is closed with catgut suture, another place is selected, and the same procedure is followed. The spermatozoa are actively motile in the epididymis even when occlusion has been present for many years. The only successful suture material is silver wire. The first suture is placed at the distal end of the incision in the vas. It is then anchored firmly in the lower end of the elliptic incision of the epididymis. Two lateral sutures are then placed to include some of the cut tubules. The suture is then passed through the cut edges of the vas, taking just enough tissue to approximate the edges, and the last suture is passed in the same way through the upper end of the incision in the vas, being carefully placed so as not to occlude the lumen. A failure at one time, if the vas is patulous, is no contraindication to a second operation. Some of the most successful results have followed a second operation.

Rupture of Intestine from Abdominal Contusion

Dr. Jere L. Crook, Jackson, Tenn.: A man, aged 34, while helping to drill a well, was struck on the abdomen by a section of a 4 inch hose full of compressed air. The brass connection of the hose struck the left inquinal region, producing an immediate protrusion of abdominal viscera into the scrotum. A physician was immediately summoned. He found the patient in considerable shock with a left inguinal hernia, the hernial contents being in the scrotum. He gave the patient a hypodermic of morphine and succeeded in reducing the hernia by taxis. The man continued to have pain, and early the next morning he vomited for the first time. His condition was much worse; the abdomen was extremely tender, with rigidity along the left rectus muscle and an increased pulse rate. He was then brought to me, making a 30 mile trip in comparative comfort, having received one-half grain (0.03 Gm.) of morphin just before starting. A left rectus incision revealed a beginning peritonitis due to a rupture of the ileum, through which a considerable amount of intestinal contents had escaped into the abdominal cavity. Instead of suturing tightly the opening in the bowel, I inserted a large rubber catheter, which was enfolded by a double row of Lembert sutures, as in gallbladder drainage. The neighboring omentum was brought down, a slight opening was made, and the tube was brought through the slit, the omentum being lightly tacked to the bowel around the tube and the tube brought out through the abdominal incision, which was closed in the usual way. Physiologic sodium chloride solution, 1 pint, was given by rectum immediately following the operation. Six hours later, proctoclysis with 5 per cent glucose and soda solution was begun and continued at intervals for twenty-four hours, when it began to return. Then two 20 cc. ampules of glucose with 1,000 cc. of physiologic sodium chloride solution was given intravenously, with marked benefit. Later the 5 per cent glucose and soda solution was given through the enterostomy tube, which was clamped for three hours and then allowed to drain fecal contents, the tube thus being used for a double purpose. The tube came out on the ninth day. Fecal drainage entirely ceased by the eleventh day, and the wound healed so rapidly that the patient was able to return to his home seventeen days after admission.

Fracture of the Neck of the Femur

Dr. Robert Carothers, Cincinnati: I have never found operative intervention necessary in acute cases, and in my judgment it is contraindicated. Hospitalization is not necessary. I believe that a fibrous union, when strong with the leg in good position, is better than union by bone with the leg adducted. Careful study, watching and nursing brings success in these cases.

Rupture of Diaphragm

Dr. Frank C. Beall, Fort Worth, Texas: Rupture of the diaphragm is probably not so rare as a survey of the literature would indicate. In the majority of cases immediate operation is not indicated, and is better deferred until all symptoms of shock have passed. In cases of rupture, the diaphragm is accessible through a high median abdominal incision. The closure of the torn diaphragm is best effected by means of interrupted sutures. Tension sutures are essential to protect the line of coaptation sutures.

Some General Principles in the Treatment of Fractures

Dr. E. Dunbar Newell, Chattanooga, Tenn.: The greatest factor in the success of all open operations on bones is the gentle handling of tissues by cleancut dissections, interfering with the blood supply to the bone as little as possible and never lifting the bones from their bed by rough retraction, not disturbing the periosteum, not removing attached fragments of bone, apposing the fractured ends without suturing or plating, if possible, and when not possible using the least amount of retention sutures or appliance that can hold the ends in apposition. I prefer silver or bronze wire as the suture material of choice for this purpose. Absolute immobilization of the fractured ends is a causative factor in nonunion. It is not only nonessential to normal osteogenesis, but retards the normal healing process in fractured bones. Firm, bony union seems to develop more rapidly following a comminuted fracture than it does in a simple, transverse or oblique fracture. Compound fractures, when the blood supply has not been seriously impaired and the soft parts not gravely mutilated, unite as quickly as simple fractures.

Technic of Hysterectomy

Dr. F. G. DuBose, Selma, Ala.: Complete hysterectomy is the operation of choice. The cervix uteri is not the keystone of the pelvic arch. It is tumor bearing tissue, and should be removed with the neoplasm and uterus. Focal infections from the diseased cervix and its glands occur, not rarely, as is stated. Supravaginal amputation of the uterus is not as safe as a complete hysterectomy. If accidents follow the complete operation, they are the result of faulty technic.

Rupture of the Uterus Following Administration of Pituitary Extract

Dr. J. Garland Sherrill, Louisville, Ky.: One case occurred in connection with a transverse presentation and dystocia from contracted pelvis. The patient came under observation four hours after rupture, which occurred during efforts at version. Recovery followed laparotomy and suture of the uterus. The second case was that of a healthy young wife at the conclusion of her first pregnancy. There was a history of considerable difficulty in labor, with some inertia. Instrumental delivery and manual extraction of the placenta were required. At the conclusion of the latter step marked hemorrhage occurred, and the patient went into serious collapse, but rallied in a short time. During the progress of the labor she received three doses, 0 5 cc. each, of pituitary extract at two hour intervals. A slight tear of the perineum was sutured. She progressed satisfactorily until the ninth day, when she developed a temperature of 103 F., with a sharp chill. During the next two days she showed some improvement, but on the twelfth day she again had chill and fever. There was little discharge and no odor. Irregular chills continued until the thirtieth day after delivery, when examination under an anesthetic revealed a tear at the ring of Bandl and two lacerations in the fundus. Hysterectomy was followed by gradual subsidence of the symptoms, and the patient made a good recovery. The fact that she received pituitary extract during labor must be considered as one of the determining causes of rupture, perhaps the chief causative factor.

Operation for Complete Prolapse of the Rectum

Dr. Urban Maes, New Orleans: I have developed a plastic operation on the levatores ani and pelvic fascia, which is based on the assumption that an abnormally deep culdesac. together with relation of the lateral ligaments, the levatores ani and the sphincter ani, is the cause of complete prolapse of the rectum. The method grew out of the idea that relaxed levatores might easily be corrected by the vaginal route and that at the same time a deep culdesac might be obliterated and the rectum suspended, as in operations for high and extensive rectocele. The operation is original with us but we have recently learned that a very similar procedure was reported by Duval and Lenormont in 1904.

Ethylene and Oxygen Anesthesia in General Surgery

Dr. Donald Guthrie, Sayre, Pa.: We have given 1,590 ethylene and oxygen anesthesias. It is now employed in general surgery except for nose, throat and mouth cases, and those cases in which the cautery is to be used. We are impressed with the advantage of ethylene over nitrous oxide and oxygen, and consider it safe. We are able to obtain relaxation which will permit operating in all types of major abdominal cases and the reduction of fractures of long bones and dislocations of the larger joints. It is especially valuable in operations on the thyroid, as the breathing is quiet and normal and there is no excessive mucus secretion. Because of its slight effect on blood pressure, it is an anesthetic well suited for the cardiovascular, the nephritic or diabetic patient who may require surgery. During the last two months we have used carbon dioxide after the ethylene has been stopped and find that the patients awaken in a very much shorter time, and that vomiting while on the table and retching now rarely occurs. We have had about the same number of postoperative pulmonary complications as after nitrous oxide and oxygen, certainly far less than following ether.

Periarterial Sympathectomy

Dr. Nathan Winslow, Baltimore: Periarterial sympathectomy has been performed four times on three patients at the University of Maryland, thrice for thrombo-angiitis obliterans with gangrene of the toes, and once for Raynaud's disease of the foot. Not once did the operation exert the slightest influence over the progress of the disease, all three patients having subsequently to undergo amputations. In no instance can the failure be attributed to faulty technic, for in each case the artery contracted down to a mere thread throughout the entire extent of the denuded area and ceased to pulsate to both sight and touch beyond the operative site, which, according to Leriche, is positive proof that the decortication has been properly executed. From present indications, periarterial sympathectomy is worthless in senile gangrene, in ascending neuritis and in erythromelalgia. In causalgia and trophic ulcers the results are more favorable, but undependable.

Spinal Block in Acute Cord Injury

Dr. Claude C. Coleman, Richmond, Va.: Unless there is good reason to believe that the cord has been destroyed at the level of the injury, the presence of a block is considered an unequivocal indication for operation; but this indication will at times be set aside by the clinical judgment of the surgeon. Serious associated injuries and hyperthermia, particularly in cases of cervical injuries, may cause the surgeon to adopt a conservative attitude, although the demonstration of a spinal block shows that the cord is compressed. In view of the fact that these operations are done under local anesthesia, an interesting question arises as to the possibility of reducing high temperature by relieving cord compression. It may be that the incarceration of the cord is a factor in the hyperthermia, and if so it would be an additional indication for prompt laminectomy. There are a few cases of severe cord injury which are benefited by operation and a still larger number to which operation offers nothing.

Aneurysm of the Subclavian Artery

Dr. Walter C. G. Kirchner, St. Louis: A right angle skin incision was employed, one portion extending along the outer border of the sternomastoid muscle, the other parallel with the clavicle. With careful dissection, the anterior border of the scalenus anticus muscle being used as a guide, there was no great difficulty in finding the first portion of the subclavian artery, which was ligated here. The aneurysmal sac was large and pocketed. Bleeding came from the internal mammary, the thyroid axis and vertebral arteries, and these were sutured and ligated. The method of obliterative endoaneurysmorrhaphy as recommended by Matas was employed. There was no gangrene of the extremity, though a slight paralysis of the extensors of the forearm resulted. The aneurysm remains completely cured after two years.

Cancer of Oral Cavity

Dr. Joseph Colt Bloodgood, Baltimore: The records of the surgical pathologic laboratory of the Johns Hopkins Hospital are complete since 1889 and allow one to make a careful study of all the lesions of the oral cavity and to compare the types and stages of cancer treated during the four decades and the results of the treatment five and more years later. The most striking differences are between the first decade up to 1900 and part of the fourth decade since 1920. In the first decade more than 50 per cent of the cases of cancer of the mucous membrane of the mouth came under observation in the late and inoperable stage. Since 1920 this has been reduced to less than 10 per cent. It should be entirely wiped out, at least to within 1 to 3 per cent, by getting correct information to the masses. Benign conditions, fully one half or more of which are distinctly precancerous, were very rare in the first decade—less than 3 per cent. Since 1920 they have been more than 60 per cent. It is fair to assume that at least half of these patients with benign lesions of the mouth are protected from cancer. Early cancer, with its probability of a cure in more than 70 per cent, were equally uncommon in the first decade—less than 3 per cent. Now in 60 per cent of the malignant lesions the local growth is in the earliest stage of cancer. Five-year cures have therefore increased from less than 5 per cent to more than 45 per cent, and little, if any, of this great improvement can be attributed, in this clinic, to improved methods of treatment. Practically all of it is due to the educational factor. If we add those benign lesions that have been brought under observation before cancer has developed, it seems just to record that cancer cures have improved from 5 to more than 75 per cent.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923 Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested)

Titles marked with an asterisk (*) are abstracted below

American Journal of Roentgenology and Radium Therapy, New York

14: 381 486 (Nov) 1925

*Present Knowledge of Pneumonoconiosis, Based on Roentgenologic Studies H. K Pancoast and E P Pendergrass, Philadelphia —p 381
*Effect of Effort on Size of Heart B Gordon, Boston —p 424
Diagnosis and Treatment of Intrathoracic Lymphadenopathy from Roentgenologic Viewpoint J D Lawson, Woodland, Calif —p 427
Roentgenologic Diagnosis of Gastrojejunal Ulcer. A B. Moore and W J Marquis, Rochester, Minn —p 432
*Diseased Appendix as Cause of Acidosis in Children A L Gray, Richmond, Va —p 436
Dyschezia H J Isaacs and M I Kaplan, Chicago —p. 439.
*Skeletal Metastasis from Primary Carcinoma of Breast. R G Giles, Cleveland —p 442
*Use of Corpus Luteum to Prevent Nausea in Radiation Therapy of Uterine Conditions R H Lafferty and C C Phillips, Charlotte, N C —p 449
Roentgen Ray Treatment of Bowen Type of Skin Cancer H. H. Hazen, Washington, D C —p 450

Pneumonoconiosis.—Pancoast and Pendergrass review the entire subject of pneumonoconiosis from the pathologic and roentgenologic standpoints, place their own group of cases on record, and urge the more widespread study of dusty industries by roentgenologic investigations with a view of lessening the dangers to which many workers are exposed

Effect of Effort on Size of Heart.—Observations were made by Gordon on animals and marathon runners Rabbits with normal and abnormal hearts were exercised to exhaustion. Roentgenographic examination showed the hearts to be diminished in size immediately after strenuous effort There was no evidence of dilatation A roentgenographic study was carried out on competitors in the Boston marathon race In these studies there was no evidence of dilatation of the heart. In most instances the hearts were found to be somewhat smaller immediately after the race and to return to a normal size within a few hours. The runners were also studied for the purpose of noting a permanent enlargement of the heart which could be attributed to prolonged athletic activity. This phase of the study indicated that many years of the most vigorous physical effort did not produce cardiac hypertrophy. It seems, therefore, that exercise does not cause cardiac dilatation and that prolonged athletic training fails to develop hypertrophy of the heart

Diseased Appendix Cause of Acidosis.—With the idea in view that "cyclic vomiting" and other gastro-intestinal conditions often referred to as "acidosis" might be due in some instances to a diseased appendix, Gray examined a number of patients and found that in many there was distinct roentgen-ray evidence of disease, either then existing or which had resulted in a definitely abnormal appendix. When this evidence was found, the appendix was removed and in practically every case a complete relief from the attacks followed

Carcinoma of Breast with Bone Metastasis.—Giles has seen seven cases of primary carcinoma of the breast with secondary cancerous deposits in the bones. Two of these patients were given roentgen-ray treatments with marked improvement in general health, and life has been prolonged, with relief from the distressing symptoms. One case is reported in detail.

Corpus Luteum Prevents Irradiation Nausea.—After having observed the benefit derived from the use of corpus luteum intravenously in those patients suffering from nervous and emotional symptoms following the production of artificial menopause by irradiation and also in some cases of vomiting of pregnancy, Lafferty and Phillips tried its use in patients while under treatment, thinking that the action of the rays on the internal secretion of the ovaries might be partially responsible for the condition. They have treated sixteen patients ranging in age from 25 to 45 years. Ten were entirely relieved, four were improved and two were unimproved. All of these sixteen patients were known to become very much nauseated following small doses of roentgen rays, when corpus luteum was not used. The authors administer usually only 1 cc. intravenously immediately after treatment, but in some patients 2 cc. is required to produce results.

American Journal of Syphilis, St. Louis

9: 589-794 (Oct) 1925

*Treatment of Visceral Syphilis with Bismuth. J. H. Musser, New Orleans —p 589
Bismuth Treatment for Syphilis. I. C. Sutton, Los Angeles —p 600 (To be Cont)
Diagnosis and Treatment of Syphilis O S Warr and L C Sanders, Memphis, Tenn —p 642.
*Normal Arsenic: Significance from Point of View of Legal Medicine C N Myers and L H Cornwall, New York —p 647.
Bilateral Charcot Hip Joints: Three Cases. J L. Greene and F. J Scully, Hot Springs, Ark —p. 704
*Drug Epiphenomena in Syphilitics. E W. Abramowitz, New York —p 709
*Paroxysmal Hemoglobinuria "E Frigore" in Syphilis H. W Traub, Chicago —p 717
Treatment of Metasyphilitic Conditions with Silver Arsphenamine and Mercury Intravenously. F. Garai, New York.—p 723
Interpretation of Quantitative Complement Fixation (Wassermann) Report R A Kilduffe, Atlantic City, N. J —p 738
Wassermann Test VIII Influence of Antigen on Wassermann Reaction in Pregnant Women D. L. Belding, Boston —p 745.
Id X Wassermann Reaction in Pregnant Woman D. L Belding, Boston —p 762
Wassermann Reaction: System Using Excess Amboceptor. L Cummer and F R Lyne, Cleveland —p 765

Bismuth in Visceral Syphilis.—Bismuth, in Musser's opinion, is a drug which in certain selected cases of syphilis has a greater value in treatment than arsphenamine. Aside from the cases that are hypersensitive to arsphenamine or are arsenic-fast, the greatest field of usefulness for this drug is in the treatment of patients with syphilis and advanced organic disease. The two most important visceral disorders in which bismuth is of great value are cardiovascular syphilis and nephritis, whether due to, or a concomitant of, syphilis

Arsenic Normal Constituent of Body.—As a result of a large series of examinations of persons taken at random, it seems to Myers and Cornwall that from a conservative point of view arsenic is undoubtedly a normal constituent of the body, depending on dietary conditions of the individual or the use of medication such as tonics, therapeutic remedies or external application All these may be causative factors for the presence of arsenic The presence of 0 40 Gm of arsenic per hundred grams of dried specimen may be regarded as a normal value for urine. The presence of arsenic is not as uniform in blood as in urine, but occasionally amounts may be found of fairly large magnitude. Whenever this amount becomes exceedingly large, suspicion should be aroused and the inference drawn that the patient has been receiving medication, provided the clinical history or serologic test shows that syphilis is present The presence of arsenic as a normal constituent in blood should not exceed 0.3 mg. per hundred grams of dried specimen Any excess of this quantity should be considered as an indication of ingestion by food or medication Arsenic may be regarded as a normal constituent of hair. Occasionally persons may be found whose hair does not contain arsenic. Milk obtained from normal persons should contain practically no arsenic, and the presence of arsenic should be considered as indicating therapeutic medication or as being brought about as a result of ingestion of certain types of food. Arsenic is found in almost all cases in babies.

Drug Epiphenomena in Patients with Syphilis.—Abramowitz calls attention to the fact that patients with syphilis may present, at the same time, two types of lesions, one due to syphilis and the other due to various other causes. Common among such epiphenomena are eruptions due to drugs used for the treatment of syphilis, and commonly prescribed, and household remedies used for headaches, constipation, insomnia, etc. Fixed drug eruptions seem to be the most frequent, and are produced by the arsenicals, phenolphthalein and the antipyrine and luminal group.

Paroxysmal Hemoglobinuria in Syphilis.—A case of paroxysmal hemoglobinuria "e frigore" is reported by Traub Paroxysmal hemoglobinuria "e frigore" is primarily and essentially a symptom complex, the substratum for which is laid by syphilis. "Vaccination" or desensitization by means of "cold," as suggested by Schiassi, plus small weekly doses of arsenic, effected amelioration of symptoms. Mercurialization appears to have effected cessation of the attacks.

American Journal of Tropical Medicine, Baltimore

5: 385-442 (Nov.) 1925

Yellow Fever Campaign in Colombia, 1923-1924. H. Hanson, New York—p 393
Prevalence of Yellow Fever Mosquito Aedes Aegypti (Linn.) in Colombia L. H. Dunn and H Hanson, New York—p 401
Geographic Distribution of Serologic Groups of Brucella Melitensis. A C Evans, Washington, D C—p 419
Suspected Yaws in Costa Rica S. Nunez, San Jose—p 425.
*Experimental Immunity in Syphilis and Yaws H. J Nichols, Washington, D C—p 429.

Immunity in Syphilis and Yaws.—Nichols states that epidemiologic data suggest that yaws protects against syphilis. Experimentally, a partial immunity against syphilis can be demonstrated in rabbits which have been infected a long time with yaws and cured by arsphenamine.

American Review of Tuberculosis, Baltimore

7: 173-272 (Nov.) 1925

*Tuberculosis in Tropics R. A. Lambert and B de Castro Filho, São Paulo, Brazil—p 173
*Case of Bilateral Spontaneous Pneumothorax. R Briggs, Pittsburgh—p 183
*Injection of Superior Laryngeal Nerve with Alcohol for Relief of Pain in Laryngeal Tuberculosis G I. Swetlow, New York—p 189
Artificial Pneumothorax: Plea for Wider Application in Treatment of Pulmonary Tuberculosis I. D. Bronfin, E Nelson and J Zarit, Sanatorium, Colo—p 197.
Results at Muskoka Institutions of National Sanitarium Association W. B. Kendall, Gravenhurst, Ontario—p 209
*Thoracic Splint for Pulmonary Tuberculosis W C Howell, Colorado Springs, Colo—p 217.
*Effect of Oral Administration of Calcium Lactate and Thyroid Extract on Calcium Content of Blood Serum in Pulmonary Tuberculosis M M. Teplitz, Hartford, Conn—p 222
*Importance of Apical Roentgenogram in Pulmonary Tuberculosis F Baum and L T. Black, Denver—p 228
*Complement Fixation in Tuberculosis IV Nature of Antibody. M Pinner, Chicago—p 233
Attenuation of Tubercle Bacilli in Incubated Tuberculous Tissues G B Webb, C. T. Ryder and G B. Gilbert, Colorado Springs, Colo—p 242
*Influence of Iron on Growth of Tubercle Bacillus on Glycerinated Beef Broth R R. Henley, Washington, D C—p 246
*Investigation of Acid Fastness of Tubercle Bacilli B Suyenaga, Chicago—p 260
Method for Transferring Tubercle Bacilli from Solid to Liquid Culture Mediums A Lutz, Baltimore—p 270

Tuberculosis in Tropics.—A systematic study made by Lambert and de Castro of the anatomic findings in 402 necropsies in São Paulo, Brazil, revealed the following facts: Lethal tuberculosis was found in eighty-three cases, or 20.6 per cent, subsidiary tuberculosis in 15.4 per cent; healed lesions only, in 4.5 per cent; and "doubtful" lesions only, chiefly instances of pleural adhesions, in 32.3 per cent. Assuming that half the "doubtful" lesions were tuberculous in origin, the cases showing active or healed infection were about 60 per cent. The percentage was practically the same for the second, third, fourth and fifth decades of life. The percentage of lethal tuberculosis in the negroes was almost double that in the whites, 27.3 and 15.5, respectively, whereas there were almost four times as many whites as negroes in which undoubted healed lesions were demonstrable. The anatomic character of the lesions, particularly among the whites, corresponds, in general, to that seen in the "tuberculized" peoples of Europe and North America, typical chronic pulmonary tuberculosis being the chief manifestation of the infection in a large majority of the cases. Except as a part of a generalized infection, involvement of the cervical and mesenteric lymph nodes was rarely seen. It is suggested that the custom of using only boiled milk may account for the apparent rarity of the bovine type of infection.

Bilateral Spontaneous Tuberculosis.—Briggs' patient, with a bilateral pneumothorax discovered accidentally during a routine examination of the gastro-intestinal tract, constitutes the ninth case of spontaneous bilateral pneumothorax in the literature The etiologic factor was not clear, as the entire clinical picture was obscured by the concomitant presence of carcinoma of the stomach. Briggs does not feel, however, that the latter disease had any bearing on the pulmonary condition On the other hand, necropsy having been refused, it cannot be said with finality that the condition was not brought on by pulmonary tuberculosis, especially since the expanded lung fields had not been examined, although from the law of probability this seems to be the most likely etiologic factor.

Alcohol Injections Relieve Pain of Laryngeal Tuberculosis.—Thirteen patients with advanced pulmonary tuberculosis and specific laryngeal tuberculosis were treated by Swetlow by injecting the superior laryngeal nerve with alcohol Four patients who had agonizing pain and could swallow practically no food of any kind because of pain were completely relieved. One patient had been free from all discomfort for twenty-two days. The pain recurred, and after another injection the patient was again comfortable Another had been absolutely free from all discomfort for forty-five days to date. Still another had been almost completely relieved for thirty-five days to date. Another group of patients, though relieved of pain, have difficulty in "pushing the food down," as they put it. Various degrees of this difficulty are complained of. In fact, all of the patients treated had this motor disturbance which disappeared in a day or two

Thoracic Splint for Pulmonary Tuberculosis.—The thoracic splint used by Howell is made by using ordinary plaster-of-Paris bandages to mold a splint to the front and back of the affected side These splints are entirely separate, and have a space of about 2 inches up and down the midaxillary line The splints extend from just below the clavicle in front and just above the spine of the scapula behind to below the ribs, front and back When the splints are about half-made, and just strong enough to stand a moderate amount of pressure, three springs are placed over the splints, and over these are placed more layers of the plaster-of-Paris bandages to incorporate the springs, cover the springs, and fix them These springs can be cut from the innermost part of a discarded phonograph spring, and should be from 10 to 13 inches long, depending on the size of the patient Care should be taken not to make the appliance unnecessarily thick, and it should not reach quite to the sternum in front or the spines of the vertebrae behind After drying an hour it can be removed, trimmed, and the edges smoothed. The patient should be instructed to wear the appliance for only half an hour at a time, for several times the first day. Each day he can wear it for a longer and longer period until it is worn twelve or more hours a day It can be easily worn while in bed, and the patient should always put it on before leaving the bed, in order to allow the fine filaments of scar tissue to be formed and to be not broken each day by rapid or laborious breathing

Blood Calcium in Pulmonary Tuberculosis—Teplitz' findings apparently indicate that there is a decided loss of calcium from the blood in the terminal stages of pulmonary tuberculosis

Importance of Apical Roentgenogram in Tuberculosis.—According to Baum and Black, the apical plate is of greatest importance in certain cases of pulmonary tuberculosis. Its value seems to lie in cases of questionable apicitis, as well as in artificial pneumothorax or thoracoplasty cases in which tuberculosis in the so-called good lung must be excluded

Complement Fixation in Tuberculosis.—Serums of tuberculosis patients with positive complement fixation were digested by Pinner with trypsin and dialyzed simultaneously until chemically free from proteins and protein fixing antibodies The complement-fixing tuberculous antibodies are therefore not of the nature of globulins. They are either lipoids or proteins which are not broken up by the action of trypsin, that is, proteins with the CO-NH linkage. The results of previous investigators, which are at variance with the results presented by Pinner, are explained by the technic of their experiments In accordance with previous investigators, it has been demonstrated that the complement-fixing antibodies have apparently no quantitative or qualitative relation to the ethylbutyrases ("lipases") True lipases with a specific action on tubercle bacillus lipoids could not be detected in serums with complement-fixing qualities The phenomenon that serums of tuberculosis patients, which twenty-four hours after the withdrawal of the blood give a negative complement-fixation test, become positive after standing for a week or more (Wedel), is not specific for tuberculous serum The same occurrence is observed, although in a much smaller percentage, in serum of undoubtedly nontuberculous persons Complement-fixing antibodies may readily be destroyed by ether Any procedure which uses ether extraction is, therefore, to be excluded from examinations for complement-fixing antibodies

Influence of Iron on Tubercle Bacillus Growth—Henley found that after eight to twelve weeks' incubation the weights of pellicles of *B tuberculosis*, human type, from glycerinated beef broth which contained 20 mg of ferric sulphate per hundred cubic centimeters, averaged 41 per cent more than the weights of pellicles from control broths which contained no added iron However, during the first few weeks the bacteria grew more slowly on iron than on control mediums

Acid Fastness of Tubercle Bacilli—By rapid transfer and rapid growth of the younger borders of colonies of a saprophytic strain of tubercle bacilli, Suyenaga was unable to establish a nonacid fast strain However, after more than 300 transfers the acid-fastness of the culture was considerably reduced

Boston Medical and Surgical Journal

193: 1085 1132 (Dec 10) 1925

Influence of Boston on American Medicine J H Gibbon Philadelphia —p 1085
Physician Student and Medical Social Worker G R Minot Boston —p 1090
*Diabetes, Insulin and Pregnancy R Fitz and W P Murphy Boston —p 1092
*Sacral Anesthesia I J Ottenheimer Boston —p 1094
Nitrous Fume Poisoning W F Boos Boston —p 1096
Neurosyphilis Early Recognition and Economic Importance H R Viets, Portland Maine —p 1098
Gallbladder Surgery W C Seelye Worcester Mass —p 1100

193: 1133 1180 (Dec 17) 1925

Treatment of Gastric and Duodenal Ulcers E S Emery Jr Boston —p 193
Iodin Hyperthyroidism, Analysis of Fifty Cases A S Jackson Madison Wis —p 1138
William Charles Wells of Charleston and London S R Robert Atlanta, Ga —p 1140
Present Status of Occupational Therapy in Hospital Curriculum J D Adams, Louisville —p 1146
Volkmann s Contracture Involving Pronator Quadratus Case J S Stone, Boston —p 1149
Preparation of Patients for Anesthesia H P Stevens, Boston —p 1151

Diabetes and Pregnancy.—Fitz and Murphy record the case of a young woman with diabetes who had a return of menstruation under insulin treatment after nearly two years of amenorrhea, and who finally became pregnant, thus establishing the fact that diabetic girls may not only have a return of normal menstruation under insulin after a long period of amenorrhea, but may also become fertile

Sacral Anesthesia—Ottenheimer has found that from 90 to 100 cc of a 1 per cent procaine solution seems to give more consistently successful sacral anesthesia than smaller quantities of a more concentrated solution

California and Western Medicine, San Francisco

23: 1521 1664 (Dec) 1925

Status of Clinical Pathologist R A Kilduffe, Atlantic City, N J —p 1553
*Glucose Intolerance Associated with Eczema S Ayres Jr, Los Angeles —p 1560
*Use of Whole Lactic Acid Milk in Private Practice J W Chapman, Pasadena —p 1564
Roentgenoscopy of Urinary Tract Case of Congenital Unilateral Kidney F B Sheldon, Fresno —p 1569
Affectivity Importance in Practical Medicine C L Allen, Los Angeles —p 1571
*Correction of Flexion, Adduction and Internal Rotation Deformities of Lower Extremities, Resulting from Cerebral Palsy of Childhood R H Pyles, Los Angeles —p 1576
*Metastatic Testicular Carcinoma Involving Abdominal, Mediastinal and Supraclavicular Glands Treated by Roentgen Ray H J Ullmann, Santa Barbara —p 1579
Early Rachitic Changes in Femur and Tibia H W Chappel, Los Angeles —p 1581
Some Important Points in Rapid Healing, Complete Restitution of Function and Low Mortality in Suprapubic Prostatectomy Cases H A *Rosenkranz, Los Angeles* —p 1584
*Allergic Dermatitis Case Due to Mohair A H Rowe and H Rogers, Oakland —p 1589
Useful Appliances in Treatment of Some Common Injuries H M Wegeforth and A Wegeforth, San Diego —p 1590

Glucose Intolerance Associated with Eczema—A preliminary report is presented by Ayres dealing with the glucose tolerance reactions in a series of thirty-six consecutive cases of typical eczema The tests were made in two laboratories, each using the Folin-Wu colorimetric technic The fasting blood sugar values in these cases of eczema were not found to be abnormally high, except *in a few cases Very striking* deviations from normal were found, however, at the one and two hour periods, following the administration of the test glucose solution Of the thirty-six eczema cases, 33 3 per cent showed 200 mg or more of glucose per hundred cubic centimeters of blood at the end of one hour, in contrast with only 5 6 per cent of 300 normal controls, and 16 6 per cent of the eczema cases showed 200 mg, or more, at the end of two hours, in contrast with only 0 8 per cent of 253 normal controls Of the thirty cases which were tested at the end of three hours, 40 per cent had not returned to a conservative estimate of normal (110 mg)

Whole Lactic Acid Milk Therapy.—Chapman emphasizes the fact that whole lactic acid milk is not a panacea He does not believe its use is indicated in normal infants He has found it to be of greatest value in the feeding of the so-called athreptic infant, although in some intestinal upsets its value is unquestioned

Treatment of Deformities Resulting from Cerebral Palsy.—The most efficient means of establishing physiologic rest, the first and most important factor in the treatment of cerebral palsy in Pyle's opinion is the plaster-of-Paris cast, which should be applied in all types of deformity as soon as the patient is seen No operation yet devised has ever effected any reciprocal improvement in the affected muscles that have lost their cerebral control Realizing that it is not a motor paralysis but a destruction of the mechanism which governs voluntary expression, surgical intervention is never indicated unless there is actual structural deformity to correct and that cannot be overcome by manipulation under anesthesia

Roentgenotherapy of Metastatic Testicular Carcinoma—*Ullmann reports the case* of a man, aged 35, who had the right testis removed eighteen months before he saw the man The pathologist's report was teratoma Recovery from operation was uneventful, and the man felt well for fifteen months, when he began to have pain alternately in the back and groins He reported to his surgeon three months later, eighteen months after operation, who found abdominal and cervical masses, and referred him to Ullmann for roentgen-ray treatment Two series of treatments were given after ten weeks He last reported April 23, 1924 He was well of his tumor twenty-two months after treatment was first instituted No report was obtained relative to the type of teratoma originally found, but Ullmann says it is fair to assume that it was of the highly malignant embryonal type, because of its rapid and extensive metastasis and its prompt response to roentgenotherapy

Allergic Dermatitis Due to Mohair—Rowe and Rogers report a case of allergic dermatitis, an eczema affecting both forearms, that was due to mohair The eczema first manifested itself one week after the patient had received a mohair upholstered overstuffed chair The chair was removed from the home *and improvement* began soon afterward and continued uninterruptedly to the complete disappearance of the lesions There was a positive history of allergy in this case. The patient's mother had had hay-fever as a child The patient herself had had hay fever in her youth while a resident of Ohio Her one child, 10 months old, had had eczematous lesions at the age of 3 months Food testing by the cutaneous scratch method revealed only delayed reactions to raspberry, apricot and banana, which reactions it was felt were probably without significance. Tests with animal emanation proteins revealed immediate positive reactions to goose feathers, cattle hair, horsehair, dog hair, rabbit fur and sheep wool, and a marked reaction to goat hair.

Journal of Industrial Hygiene, Baltimore

7: 539 582 (Dec) 1925

*Efficiency of Oxygen Carbon Dioxide Treatment of Carbon Monoxide Poisoning C. K Drinker, Boston —p 539
Human Side of How to Do It Best. A W Sanders, Lancashire, England —p. 559
Photometric Methods for Studying and Estimating Suspensions of Dusts, Fumes and Smokes. P Drinker, R. M Thomson and J L Finn, Boston.—p 567.

Treatment of Carbon Monoxide Poisoning.—The treatment of carbon monoxide poisoning by inhalation of a mixture of 5 per cent carbon dioxide and 95 per cent of oxygen has been in use for two years At present, 300 organizations possess approved apparatus for giving this treatment. One hundred and eighty of these have replied to a letter of inquiry, 110 cases being reported in enough detail to be considered in Drinker's report, though the replies indicate a much larger actual use. All the evidence obtained indicates that (*a*) The inhalation treatment is exceedingly valuable in mild gassing relieving or preventing the occurrence of headache, nausea, etc. (*b*) Patients seriously gassed but still breathing revive rapidly and thoroughly. (*c*) It is practicable to use the inhalation treatment with prone pressure artificial respiration when breathing has ceased.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

26: 325 396 (Dec) 1925

*Acute Cocaine Poisoning. Prophylaxis and Treatment in Laboratory Animals A L Tatum, A. J Atkinson and K. H. Collins, Chicago —p. 325
Active Principles of Pituitary Extract H H Knaus, London —p 337
*Action of Certain Drugs and Ions on Rat's Uterus H H Knaus and A. J Clark, London —p 347.
Oestrous Variations of Uterine Activity in Rat A J Clark, H H Knaus and A S. Parkes, London —p. 359.
*Comparative Study on Hypnotics of Barbituric Acid Series C Nielsen, J. A. Higgins and H C. Spruth, Chicago —p. 371
Mechanism of Vagus Inhibition as Produced by Epinephrine W J R Heinekamp, Chicago —p 385

Cocaine Poisoning.—Tatum, Atkinson and Collins believe that death in cocaine poisoning is due to the effects of direct medullary injury together with the deleterious indirect effects of the cocaine poisoned brain on the medullary centers Artificial respiration alone is sufficient to raise the minimal fatal dose in the rabbit from 100 mg. to approximately 350 mg per kilogram The prophylactic administration of a mixture of barbital sodium and paraldehyde to the dog produces a fourfold increase in tolerance. Convulsions are completely and practically instantaneously controlled by an intravenous injection of the barbital paraldehyde mixture.

Action of Extract of Posterior Lobe of Pituitary on Uterus.—Experiments done by Knaus show that extract equal to 1 mg. of moist posterior lobe of the pituitary injected intravenously produces in the pithed cat a strong action on the uterus lasting for at least an hour together with a marked rise of blood pressure. The corresponding dose for a human being is extract equal to about 25 mg. of moist gland, and this appears to be the maximum dose that should be given intravenously. Larger doses are permissible for hypodermic or intramuscular injection, especially as the absorptive capacity of the subcutaneous tissues is impaired during pregnancy

Hypnotics of Barbituric Acid Series.—The toxicity and efficiency of sixteen members of the barbituric acid series were determined by Nielsen, Higgins and Spruth for the albino rat. The results are listed in order of increasing toxicity, increasing efficiency and increasing safety margin.

Minnesota Medicine, St. Paul

8: 707-760 (Nov.) 1925

Cholecystography in Its Application to Diagnosis of Cholecystic Disease R D. Carman, Rochester, Minn —p. 707.
Diagnosis of Chronic Abdominal Disease D M Berkman, Rochester, Minn —p 712.
Lungs in Infancy and Childhood C A Stewart and E S. Platou, Minneapolis —p. 715
Indirect Inguinal Hernia. Relation to Accidents and Workmen's Compensation O W. Parker, Ely.—p 719.
Grading of Carcinoma A C Broders, Rochester, Minn —p 726
*Malignant Tumors of Thymus. Case J A Evert, Glendive, Mont —p 730
Management of Colloid Goiter H. C Habein, Rochester, Minn —p 734.
Abruptio Placentae: Case. J. A Cosgriff, Mankato, Minn —p 738
Treatment of Syphilis W H. Goeckerman, Rochester, Minn —p 740

Malignant Tumor of Thymus.—Evert reports a case of sarcomatous thymoma with numerous metastases in the lungs, skin, left cervical lymph nodes, liver and kidney, occurring in a man, aged 28, whose first complaint was cough and sore throat. The skin lesions led to a diagnosis of smallpox, and when pronounced lung symptoms arose it was believed to be a case of visceral smallpox The true diagnosis was made post mortem.

New Jersey State Medical Society Journal, Orange

22: 455-498 (Dec) 1925

Principles of Chemotherapy J. A. Kolmer, Atlantic City —p 455
Carcinoma of Bladder: Treatment by Combination of Surgery, Electrothermic Coagulation, Radium and Roentgen Rays J T Stevens, Montclair —p 458
Causation of Chronic Joint Disease S A Twinch, Newark —p 474
Has Doctor Lost His Golden Rule? J. H Bradshaw, Orange —p 480

New York State Journal of Medicine, New York

25: 1093 1132 (Dec 15) 1925

*Therapeutic Value of Scarlatinal Antitoxin F G Blake and J D Trask, New Haven, Conn.—p 1093.
Endocrine Treatment of Menstrual Disorders E F Donovan, Buffalo. —p 1099.
*Functional Abnormalities of Menstruation G M Gelser, Rochester. —p 1105
*Protein (Milk) Injections in Gynecologic Infections R M Rawls, New York —p 1108.
Provisions for Temporary Care of Insane Pending Commitment in New York State W Kiernan, New York —p. 1111

Therapeutic Value of Scarlatinal Antitoxin.—Blake and Trask conclude from their study that scarlatinal antitoxin in proper amount is a specific and prompt cure for uncomplicated scarlet fever. It indirectly benefits septic complications during the acute stage of scarlet fever, presumably by curing the specific toxemia It has not been possible to demonstrate that it possesses any therapeutic value in postscarlatinal sepsis after the rash has faded. To be therapeutically efficient in reasonable dosage, an antiscarlatinal serum should contain at least 12,500 minimal blanching doses of antitoxin per cubic centimeter or be able to neutralize at least 10,000 skin test doses of toxin per cubic centimeter. The amount of toxin required to cure scarlet fever promptly and with certainty by intramuscular injection varies from 3,000 to 12,000 units (from 30 to 120 cc. of a serum which neutralizes 10,000 skin test doses of toxin per cubic centimeter), depending on the size of the patient and the severity of the disease To obtain the best therapeutic results, the full amount of antitoxin required in each case should be estimated and given at once as soon as the diagnosis is made.

Endocrine Treatment of Menstrual Disorders.—Fifty-two cases of menstrual disturbances were seen by Donovan in which roentgenograms were taken of the sella and of the hand In these cases, signs of pituitary deficiency were found in association with large and small sellae. The size of the sella is no indication of the size or functional capacity of the contained pituitary In all the cases, however, some degree of tufting in the terminal phalanges, with or without mushrooming, was seen, and the more marked the symptoms and the longer their duration, the more evident were these changes. The tufting and mushrooming are considered as evidence that overactivity of the anterior pituitary was present at some time This, associated with fatigue—constant and made worse on exertion—is taken as an indication that underactivity is present and that anterior pituitary medication is needed If there is present shoulder, waist and hip girdle obesity, extract of whole gland is given Donovan emphasizes the fact that glands of internal secretion are not isolated organs; but each gland is to be considered an integral part of an interrelated chain of glands Furthermore, they affect and are affected by the nervous system and other organs of the body.

Radiotherapy of Ovaries.—Gesler sounds a most emphatic warning against the indiscriminate subjection of patients to irradiation of the ovaries. The essential prerequisite for this is an exact diagnosis and an understanding of what is to be accomplished, for without this one is only doomed to disappointment.

Milk Injections in Gynecologic Infections.—Milk injections in pelvic inflammatory conditions have been given by Rawls in 111 cases. The milk has been used intragluteally with an initial dose of 5 cc. and then 10 cc. every third or fourth day. In ambulatory cases, in the outpatient department, intradermal milk, in 1 cc. doses, is used. Rawls has used as many as twenty consecutive doses in a single case, but most often from six to eight injections, from which he believes the maximum of benefit is obtained. Roughly, about 39 per cent of patients recovered, 54 per cent improved in health and 7 per cent remained as before.

Oklahoma State Medical Association Journal, Muskogee

18: 279-304 (Dec.) 1925

Maxillary Sinusitis. W. E. Dixon, Oklahoma City.—p. 279.
Nasal Conservation. C. H. Haralson, Tulsa.—p. 283.
Arsphenamine in Treatment of Diseases of Eye, Ear, Nose and Throat. J. W. Echols, McAlester.—p. 285.
Sympathetic Ophthalmia. W. M. Jones, Tulsa.—p. 287.
Foreign Body in Eye: Two Cases. F. R. Vieregg, Oklahoma City.—p. 290.

Philippine Journal of Science, Manila

28: 313-450 (Nov.) 1925

*Typical and Atypical Bacillus Dysenteriae Shiga; Agglutination Reactions. G. R. Lacy.—p. 313.

Dysentery Bacillus.—Forty-five strains of bacilli similar to and identical with *Bacillus dysenteriae* Shiga have been studied by Lacy. Serologically twenty-seven strains formed one group which corresponded to typical *B. dysenteriae* Shiga, nine formed a second group different from the first, and nine others formed a heterologous group agglutinated only by their homologous immune serums. The members of the large agglutinable group were indol negative, while the members of the small agglutinable group and the inagglutinable group were indol positive, with two exceptions. The two smaller groups corresponded culturally to the Schmitz bacillus, while the larger group corresponded to the Shiga-Kruse group of true *B. dysenteriae*. The members of the three different groups were pathogenic for rabbits. Polyvalent antidysenteric serum afforded protection against experimental inoculation with cultures of all three groups.

Surgery, Gynecology and Obstetrics, Chicago

***41:** 701-850 (Dec.) 1925*

Endo-Aneurismoraphy. R. Matas, New Orleans.—p. 701.
*Ovarian Grafting. W. B. Bell, Liverpool, England.—p. 706.
*One Thousand Operations for Gastric, Duodenal and Jejunal Ulcers. V. Pauchet, Paris.—p. 711.
Congenital Stricture of Ureter; Four Cases. H. L. Kretschmer, Chicago.—p. 713.
*Repair of Ruptured or Strictured Ureters. L. L. McArthur, Chicago.—p. 719.
*Pneumonography. L. H. Clerf, Philadelphia.—p. 722.
*Analysis of Wound Union. B. H. Goff, New York.—p. 728.
*Does Bone Form From Osteoblasts or From Metaplasia of Surrounding Connective Tissue? C. Rhode, Germany.—p. 740.
*Bladder Neoplasms. D. W. MacKenzie, Montreal, Quebec.—p. 773.
Technic of Gallbladder Surgery. E. Holman, Cleveland.—p. 778.
Cancer Cell and Nature's Defensive Mechanism. W. C. MacCarty, Rochester, Minn.—p. 783.
*Bone Formation in Thyroid. M. G. Seelig, St. Louis.—p. 794.
Primary Pneumococcus Peritonitis in Children: Two Cases. A. H. Montgomery, Chicago.—p. 798.
*Thirty Cases of Proved Tuberculosis of Pleura. W. S. Lemon, Rochester, Minn.—p. 804.
*Aneurysms in Scarpa's Triangle: Ten Cases. R. W. McNealy and J. L. Spivak, Chicago.—p. 817.
Results in Surgery of Uterus and Adnexa. E. H. Pool and E. M. Hawks, New York.—p. 825.
*Levator Cervicis Uteri. F. G. DuBose, Selma, Ala.—p. 834.
Right Ureteral Obstruction Due to Short Cecal Mesentery. T. N. Hepburn, Hartford, Conn.—p. 836.
Guillotine for Dividing First Rib in Paravertebral Thoracoplasty. H. Lilienthal, New York.—p. 838.
Liver Pack Following Cholecystectomy for Acute Cholecystitis. R. L. Mason, Boston.—p. 839.

Ovarian Grafting.—In Bell's opinion the question of the employment of ovarian grafting in preference to the so-called clean sweep is no longer open to discussion: ovarian transplantation is a procedure no scientific gynecologic surgeon can afford to neglect. It only remains to select the proper cases, and endeavor to perfect the technic that in the future one may prophesy, even more definitely than is possible today, a successful result. Bell analyzes 118 cases. Menstruation was possible in 107 cases; menstruation occurred in 71 cases; no menstruation and no menopausal symptoms occurred in 21 cases; no menstruation and menopausal symptoms occurred in 15 cases. Menstruation was impossible owing to supravaginal or complete hysterectomy in 11 cases; no menopausal symptoms occurred in 6 cases; menopausal symptoms occurred in 5 cases. Functional results were obtained in 98 cases; failure to obtain functional results, 20 cases.

Results of Surgery for Peptic Ulcer.—Pauchet has performed 1,000 operations for gastric, duodenal and jejunal ulcers, divided as follows: 367 for gastric ulcer, 536 for duodenal ulcer, 58 for gastric and duodenal ulcer combined, 39 for postoperative jejunal ulcer. The immediate mortality was as follows: gastro-enterostomy alone for duodenal ulcer, 1 case, 2 per cent; gastrectomy for duodenal ulcer, 2 cases, 5 per cent; resection for gastric ulcer in proximal third of lesser curvature, 9 per cent; resection for ulcer in the prepyloric portion or in the middle third of the lesser curvature, 1 case, 4 per cent. Prior to 1905, Pauchet limited his intervention to gastro-enterostomy with a mortality of 8 per cent. From 1905 to 1910, a wedge-shaped excision of the ulcer-bearing area alone was done with a mortality of 20 per cent. Since 1910, he has performed 367 operations for gastric ulcer. Of these there were 20 Balfour operations, 4 gastro-enterostomies, 18 annular (sleeve) resections and 327 gastrectomies (gastropylorectomies) after primary division of the duodenum. Pauchet says that the end-results of gastric ulcer operations are better when a large portion of the stomach is removed. The more one resects, the greater the percentage of cures. In 18 sleeve or annular gastric resections, a cure was obtained in only 3 cases after an extensive gastrectomy. The Billroth I method is his first choice but whenever this cannot be performed, he resorts to the Polya method. In 4 cases, a secondary operation was necessary after the Billroth I, because the duodenum was stenosed. Pauchet limits the Billroth I to cases in which the duodenum is relatively large. When this is not the case, he always employs the Polya method. In every high lying ulcer a total gastrectomy was performed in 5 cases, while in 21 cases Pauchet resected the lesser and three fourths of the greater curvatures, a method to which the French apply the term "resection en gouttiere." This method is followed by the most satisfactory end-results. In 2 cases there was a recurrence after the Balfour method and a secondary subtotal resection was followed by complete relief of symptoms. Pauchet has found typical carcinomatous changes in 15 per cent of 200 consecutive gastrectomies for ulcer which were subjected to microscopic examination. In 536 operations, gastro-enterostomy alone was performed in 213 cases. In 130 cases of duodenal ulcer, gastrectomy with resection of both the duodenum and stomach has been done. Pauchet has never found microscopic evidence of malignant changes in duodenal ulcers. A gastropylorectomy was the method of treatment in 39 jejunal ulcers with 4 deaths. The only jejunal ulcers found by Pauchet at operation in recent years were in patients operated on by other surgeons.

Repair of Ureter.—Given a missing portion of a ureter, even from 1 to 2 inches in length, McArthur makes a longitudinal slit in the side of the proximal portion sufficiently long to admit two catheters. One of these, a rubber urethral catheter, is inserted upward to the renal pelvis; the second, a ureteral catheter of good size, is inserted downward so that it passes out of the proximal end, and bridges the gap to the proximal end of the distal remaining ureter. Both ends of the ureters are then approximated as closely as feasible by absorbable stitches. The catheters are then brought to the surface and permanently secured to the skin by stitches or other devices. All the urine from that kidney is thus diverted from the field of operation during the time of epithelization The body tissues heal together around the catheter, bridging the gap between the renal end and vesical end, and the catheter simply remains in situ until in the judgment of the operator an epithelial lining has had time to grow between the ends No experimental work along these lines has determined the time element, but that epithelization does occur has been amply demonstrated in the various reconstruction methods that have proved successful McArthur reports one successful case

Pneumonography.—Clerf points out that in a large series of cases it has been conclusively demonstrated that the Jackson method of bronchoscopic insufflation of bismuth subcarbonate into the tracheobronchial tree is devoid of untoward effects The introduction of lipiodol in selected cases seems harmless By increasing the visibility of the bronchial tree in cases of penetrating foreign bodies, the roentgenologist can furnish information which will assist in determining the best method of removal In cases of lung suppuration a more accurate determination regarding the location and extent of the process is possible, which will often be of great assistance in deciding the proper form of treatment Lung mapping, combined with a diagnostic bronchoscopy, will often lead to an early diagnosis in neoplasm of the lung Pneumonography used in conjunction with roentgenography affords the best available diagnostic aid to the thoracic surgeon

Analysis of Wound Union—The analysis made by Goff covers 3,000 abdominal incisions Of this number 2755 have been classified as clean, while 245 incisions have been classified as contaminated at the time of operation The procedures performed through these incisions have been largely gynecologic, with an occasional operation on the appendix or gallbladder, or for some type of hernia Mammary and kidney incisions have been excluded The vast majority of incisions have been longitudinal median ones, the remainder have been transverse suprapubic, paramedian, McBurney, or inguinal With the exception of a very small number, the incisions have been of the intermuscular type rather than the type in which muscle fibers are separated The average incidence of faulty wound union from all causes in clean abdominal incisions closed by absorbable suture material has been 12 1 per cent, while in clean incisions closed by nonabsorbable suture material it has been 4 3 per cent The average incidence of infection in clean abdominal incisions closed by absorbable suture material has been 10 per cent, while in clean incisions closed by nonabsorbable suture material it has been 4 per cent The average incidence of faulty wound union from all causes in contaminated abdominal incisions closed by absorbable suture material has been 83 5 per cent, while in contaminated incisions closed by nonabsorbable suture material it has been 70 per cent The average incidence of infection in contaminated abdominal incisions closed by absorbable suture material has been 41 1 per cent, while in contaminated incisions closed by nonabsorbable suture material it has been 37 7 per cent With the methods available at the present time, Goff says, the incidence of faulty wound union from all causes should not exceed 5 per cent in clean incisions and 70 per cent (including drainage as a cause of faulty wound union), in contaminated incisions

Only Osteoblasts Form Bone—As a result of clinical experience and experiments Rhode has come to the conclusion that after excluding tissue and organs, bone building power is found only in specific bone-building tissues (osteoblasts of the periosteum and marrow endosteum) Metaplastic bone building from the usual connective tissues of the musculature, the muscle septums, the tendons, the fascia, and the subcutaneous tissues does not take place Heterotopic bone formation in soft tissue is from the unused remaining mesenchyme cells, which, through traumatism, infection, toxic stimuli or disturbance of metabolism, may abandon their indifferent stage at any time and commence to build bone

Bladder Neoplasms—MacKenzie analyzed 288 cases, of which 118 were malignant Hematuria was the chief complaint in 75 per cent of cases, and usually the cause for seeking relief Increased frequency of urination was the chief complaint in 25 per cent of cases, and associated in from 40 to 60 per cent Dysuria was the chief complaint in 10 per cent of cases, and associated in from 15 to 20 per cent Associated complications were pain in loin, incontinence, pain in perineum and genitalia Suprapubic pain was not common

Bone Formation in Thyroid.—Seelig reports a case of massive bone formation in the thyroid, so-called struma ossea, in which there was also complete block of the sympathetic trunk in the neck, due to pressure by the thyroid

Tuberculosis of Pleura—In eighteen of the thirty cases reported by Lemon, the history of illness was so insidious that it was reasonable to believe that the infection was tuberculous from the beginning In fourteen cases, the onset was definitely characteristic of pleurisy Some of the patients complained of soreness throughout the chest and later developed pain on inspiration, but others had sudden, knifelike, agonizing pains increased by inspiration and by coughing One patient reported that the chest became immobile and enlarged before a diagnosis of fluid collection was made, and one patient suffered from aphonia This was the only instance of pressure phenomena recorded In Lemon's opinion it would seem wise to regard all cases of serous effusion as tuberculous, and to bear in mind that a great deal of harm can be done by hasty or ill considered treatment, and that a large percentage of all cases of empyema, especially if not preceded by pneumonia or sepsis, are also tuberculous

Aneurysms in Scarpa's Triangle—Of seven traumatic aneurysms, reviewed by McNealy and Spivak, six were arteriovenous and all six were the result of bullet wounds The other traumatic aneurysm followed the surgical removal of an infected inguinal gland three and one-half months previous to the appearance of the pulsating tumor at the site of the operation It is possible that syphilis had a part in the causation of this case since on examination it was found that the patient had a 4 plus Wassermann reaction In three spontaneous aneurysms the Wassermann was positive in each case

Levator Cervicis Uteri—The structure in the female to which attention is called by DuBose is the prototype of the levator prostatae in the male

Virginia Medical Monthly, Richmond

52 · 545 616 (Dec) 1925

Headaches Distinctive Features G E de Schweinitz, Philadelphia —p 545
Obstetric Forceps Operation D S Hillis Chicago —p 550
Legitimate Boundaries of Public Health Activities F G Williams, Richmond —p 555
Observations of Medical Man Among Malay Tribes of Sulu Archipelago D T Gochenhour Stuarts Draft —p 561
*Gross Enlargement of Vermiform Appendix Case C Williams, Richmond —p 569
Our Lost Prestige—How Can We Regain It? J M Miller, Wytheville —p 573
Epidemic Encephalitis J K Gray Marion —p 576
Correction of Nasal Deformities by External Route F G Gill Roanoke —p 578
Treatment of Lacerated Wounds of Extremities A M Showalter, Christiansburg —p 581
Potter s Version J M Kopp Roanoke —p 583
Ethylene Anesthesia A P Jones Roanoke —p 589
Place of Pituitary Extract in Obstetrics M P Rucker, Richmond —p 590
Management of Labor H T Kane Washington D C —p 593
Foreign Bodies in Air and Food Passages F D Woodward, Charlottesville —p 596

Enlarged Vermiform Appendix—In the case studied by Williams, the appendix was the size of a small banana, measuring 4 inches (10 cm) in length and 1½ inches (3 5 cm) in diameter The tremendously thick wall of the appendix extended into the head of the cecum where the wall including the ileocecal valve was almost 1 cm thick It was obviously impossible to remove the appendix or to amputate the cecum without endangering the ileocecal connection However, the acute inflammation was so severe that removal of the appendix was necessary, hence the lower ileum and cecum were resected

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. *Single case reports and trials of new drugs are usually omitted*

British Journal of Radiology, London

30: 399-450 (Nov.) 1925

Time Factor in Disappearance of Roentgenographic Evidence of Fracture of Skull. W. H. Stewart.—p. 399.
Anatomic Analysis of Roentgen-Ray Picture in Phthisis of Lungs. L. Küpperle.—p. 416.
Intratumoral Radium Irradiation. G. Failla.—p. 420.
Encirclement Method of Using Buried Radium Tubes. W. S. Handley. —p. 422.
Use of Radium in Combination with Roentgen Rays and Surgery. N. S. Finzi.—p. 430.
Skin and Tumor Reactions; Bearing on Radiotherapy. R. V. Hudson. —p. 432.

British Medical Journal, London

2: 874-928 (Nov. 14) 1925

Carcinoma of Stomach. W. I. De Courcy Wheeler.—p. 875.
II. Symptoms and Diagnosis. E. I. Spriggs.—p. 877.
III. Diagnosis: Radiologic and Chemical. A. F. Hurst.—p. 879.
*IV. Relation of Carcinoma to Ulcer. M. J. Stewart.—p. 882.
Occupational Diseases of Ear, Nose and Throat and Their Prevention. F. H. Westmacott.—p. 886.
II. S. W. Grimwade.—p. 890.
III. D. Ranken.—p. 891.
IV. T. J. Faulder.—p. 892.
V. T. R. Rodger.—p. 893.
Diagnostic Exploration of Nasal Sinuses by Suction Syringe Method. P. Watson-Williams.—p. 894.
*New Method of Fitting Artificial Leg Sockets. E. M. Little.—p. 896.

Relation of Carcinoma of Stomach to Ulcer.—In trying to determine as accurately as possible the primary point of origin of chronic gastric ulcer and cancer, Stewart analyzed a series of 235 cases from the postmortem room, in which accurate information as to site was available, namely, 115 cases presenting chronic ulcer alone, 110, cancer alone, and ten cases in which it was considered that the cancer had probably originated in a simple chronic ulcer. Of the ten cases in which cancer had apparently arisen in a preexisting simple ulcer, nine lesions were in the lesser curvature region and only one was near the pylorus. In twenty-one of a series of 165 cases showing cancer, partial gastrectomy had been performed, and this group is excluded in considering local lymph gland metastasis. Of the remaining 144 cases, 104 showed involvement, obvious to the naked eye, of adjacent lymph glands. Those in the lesser curvature of the stomach were involved most frequently, but very often those along the greater curvature and in relation to the head and body of the pancreas were affected as well. Involvement of the subpyloric glands and of those in the portal fissure was frequent. In considering more remote metastasis, the whole series of 165 cases is included. In twenty-six cases there was more or less extensive involvement of the lumbar (prevertebral) glands, always with well marked local gland involvement. In seventeen cases there was intrathoracic lymph gland involvement, and in only five of these was this unaccompanied by downward extension along the abdominal aorta. In nine cases there was involvement of the supraclavicular glands—in seven on the left side only, and in two on both sides. Intrathoracic metastasis coexisted in seven of these cases, including the two in which the supraclavicular adenopathy was bilateral. The two remaining cases, both left sided, were probably examples of direct thoracic duct metastasis. In one case, only the local gastric glands were invaded; in the other case, partial gastrectomy had been performed ten months before, and, apart from local recurrence in the gastrojejunal anastomosis, the left supraclavicular adenopathy was the only cancerous lesion found. Peritoneal dissemination was present in forty-two cases, and in twenty-five of these it was both extensive and profuse. Direct extension to adjacent organs occurred with the following frequency: pancreas, nine times; transverse colon, eight times (once with formation of a gastrocolic fistula); spleen, six times; liver, five times and kidney, once. In eight cases the tumor had entered the pylorus and invaded the duodenum. Visceral metastasis occurred in cancer of the stomach as follows: liver, forty-four cases; ovaries, ten cases; suprarenals, six cases; kidneys, three cases; pancreas, three cases; spleen, two cases; heart, one case. In sixteen cases perforation, acute or subacute, had occurred. Analysis of 216 clinical specimens of gastric ulcer and gastric cancer showed that 9.5 per cent of the cases of chronic ulcer had become cancerous; or, approaching the matter from the other standpoint, 17 per cent of the cases of cancer had originated in a chronic ulcer.

New Method of Fitting Artificial Leg Socket.—Little describes a socket in the upper end of which is made a spiral groove of a little more than one turn. The groove is 1⅛ inches wide and one-eighth inch deep. The socket is made to fit, without any sock, as closely to the stump as is consistent with comfort, but the end of the stump is left free. This fit is so close that a partial vacuum is created when an attempt is made to withdraw the stump. To facilitate withdrawal a spring valve is fitted on the lower end of the socket, through which air may be admitted when it is desired to remove the leg. Attempts to pull off the limb by main force without opening the valve failed in all cases in which it was attempted.

2: 929-984 (Nov. 21) 1925

Nature of Man's Structural Imperfections. A. Keith.—p. 929.
Clockwork Control of Carrel-Dakin Treatment. C. W. Cathcart.—p. 933.
Pathologic Laboratory in General Practice. S. C. Dyke.—p. 934.
Tuberculous Disease of Spine. I. H. Gauvain.—p. 937.
Id. II. Operations for Spinal Fixation. G. W. Girdlestone.—p. 940.
Osgood-Schlatter Disease. R. Ollerenshaw.—p. 944.
Full-Term Multiple Pregnancy in Uterus Bicornis Bicollis. C. L. Houlton. —p. 946.
Renal Decapsulation in Acute Nephritis with Anuria. E. N. Russell.—p. 946.
*Extradural Spinal Meningeal Hemorrhage Without Gross Injury to Spinal Column. J. Reid and J. Kennedy.—p. 946.
Strangulation by Umbilical Cord. P. Henderson.—p. 947.

Extradural Spinal Meningeal Hemorrhage.—Reid and Kennedy report the case of a woman who sustained a slight bruise of her left arm as the result of a trivial accident while cycling. She went to work immediately after the accident, and the following day felt quite well, except for a little stiffness in her arm and slight pain in her back. Two days afterward she did not feel quite so well, and remained at home; on the next day, she felt much worse. Her expression was anxious, her face flushed, and she complained of pain in her back, which was most apparent when she attempted to rise after sitting down. The temperature was 101 F.; the pulse, 110: she was menstruating; the pupils were normal. There was no trouble with bowels or bladder. The knee jerks were present but not brisk. She walked perfectly well, and had come from her house, a distance of about one mile, apparently without much difficulty. The next morning there was flaccid paralysis of the right leg and partial paralysis of the left leg, but no vomiting. There were no bladder symptoms, no signs of bruising in the lumbar region or spinal damage of any sort; zones of ovarian hyperesthesia were well marked. Her condition gradually became worse, with flaccid paralysis of both legs, loss of all reflexes and sensation, and paralysis beginning in the arms. Next, the respiratory center began to fail. She was still conscious, but paralysis of the arms and legs was complete. Spinal puncture was considered, but deemed inadvisable owing to her condition. The postmortem examination revealed extensive extradural meningeal hemorrhage, extending the whole length of the cord up as far as the level of the third cervical vertebra, tuberculous foci in both tubes, in the lungs, and on the meninges in the occipital region; there was no sign of tuberculous foci in the meninges of the cord, no fracture or dislocation of the spinal column, and the actual vessel from which hemorrhage originated was not discovered.

2: 985-1040 (Nov. 28) 1925

*Successful Case of Embolectomy. G. Jefferson.—p. 985.
Method of Nasal Plastic Repair by Cartilage Graft. E. Watson-Williams.—p. 987.
*Ultraviolet Light and Antiscorbutic Vitamin. P. Eggleton and L. J. Harris.—p. 989.
*Cystic Dilatation of Common Bile Duct. N. H. Hill and R. A. Ramsay. —p. 991.

Treatment of Hemorrhoids by Galvanocautery. W. S. Whitcombe. —p. 992.
Acute Intestinal Obstruction. W. Taylor.—p. 993.
Id. II. W. S. Handley.—p. 995.
Id. III. D. P. D. Wilkie.—p. 996.
Intestinal Obstruction on Shipboard. G. H. Oriel.—p. 1004.
Operation for Extra-Uterine Gestation. A. C. Gillies.—p. 1005.
Epinephrin in Angioneurotic Conditions. J. R. Keith.—p. 1005.
Collosol Argentum in Treatment of Septicemia Following Abortion. J. Fine.—p. 1005.
Congenital Occlusion of First Part of Duodenum. G. Ralston.—p. 1005.
Temporary Blindness After Concussion. G. Anderson.—p. 1005.

Successful Embolectomy.—Jefferson reports the case of a man who was operated on for the cure of an umbilical hernia. The operation was a simple one and was of only fifteen minutes' duration. Twenty-six hours after the conclusion of the operation, the patient complained of a tingling sensation of "pins and needles" in the left arm, with increasing numbness. This rapidly developed into an intense pain, with complete paralysis of the arm. Lodgment of an embolus about the termination of the axillary or commencement of the brachial artery was diagnosed, and operation advised and accepted. The axillary artery was exposed to view and was seen to be pulsating freely. As a finger was passed downward along the vessel, a doughy substance was felt in its interior. This distal portion (brachial artery) was seen to be contracted, no larger than the normal radial, so that one passed from normal pulsating vessel, over a resistant portion, to a contracted and apparently empty vessel. A longitudinal incision, about 2 cm. long, was made into the vessel, and a dark piece of clot immediately protruded. This was gently pulled out with forceps, and proved to be 2 cm. long. The vessel was "milked" upward, and a much larger piece of clot, rather whiter and more granular in appearance, was extruded. The wound in the artery was sewed up with four fine silk stitches, the silk having been well soaked in liquid petrolatum and the operation field drenched with the same fluid. The patient stated that the pain had gone, and a few seconds later he could move his fingers, and the arm was becoming warmer. By the time the deep fascia and skin had been closed, full function was restored to the arm; the radial pulse was full and free; the color pinker than normal, and the grip strong. Two weeks after the man left the hospital he developed a thrombosis of the left femoral vein which gave little trouble, but three weeks after that the right leg became thrombosed, and has continued swollen and painful, though he can get about on it. There are some enlarged venous radicles on the lower abdomen, which suggest that the thrombosis has extended perhaps as high as the inferior vena cava. The umbilical hernia and the arm remain in excellent condition.

Ultraviolet Rays and Antiscorbutic Vitamin.—The results obtained by Eggleton and Harris indicate that while the effects of fat-soluble vitamin deficiency in, for example, an infant's diet can be remedied to some extent by exposing the infant (or the food) to sunlight, if one is to prevent scurvy one must rely on an adequate amount of vitamin C in the diet. Cow's milk may be deficient in this vitamin in winter, owing to the animal's inadequate stall diet. The observed increase of infantile scurvy in late winter probably results from this cause rather than from absence of sunlight, to which it has been attributed latterly without sufficient evidence.

Cystic Dilatation of Common Bile Duct.—Hill and Ramsay report the case of a child, aged 2 years and 3 months, who vomited every day, sometimes three times a day. The vomit was independent of food, and was chiefly nocturnal. She did not complain of any abdominal pain, and was not constipated. On the right side of the abdomen a large mass extended from beneath the liver to just above the crest of the ilium. It did not appear to move on respiration. The urine was faintly alkaline, and contained no albumin, sugar or bile salts or pigments. During the first week in the hospital the child vomited nine times. The bowels were not constipated, and the feces were of normal color. She lost weight. The blood was normal. The Wassermann reaction was negative. The vomiting improved with alkalis. An exploratory laparotomy was performed. The tumor was found to be globular and cystic, and about 4 inches in diameter. It lay below and separate from the liver. Clear, mucoid, pale yellow fluid was withdrawn. It contained no albumin, no urea, and no pancreatic ferments, but it did contain bile salts and bile pigments. The general condition of the child became steadily worse. She became weaker and weaker. Bile in various forms by the mouth was tried, and also reduction of fats in the diet, but no improvement took place. She died three weeks after the operation. Postmortem examination revealed a cystic swelling situated in front of the right kidney and behind the second part of the duodenum and the head and greater part of the body of the pancreas. It consisted of a cystic dilatation of the common bile duct, continued into the hepatic ducts and also into the cystic duct, where it joined the common bile duct.

2: 1041-1098 (Dec. 5) 1925

Symptoms and Signs of Abdominal Crises in Children. J. E. Adams. —p. 1041.
*Cholecystography. D. P. D. Wilkie and C. F. W. Illingworth.—p. 1046.
*Embryoma of Testis: Sudden Death from Thrombosis of Pulmonary Veins. A. E. Webb-Johnson.—p. 1048.
*Venesection and Blood Transfusion in Carbon Monoxide Poisoning. S. Gordon-Watson.—p. 1049.
*Uses and Abuses of Endocrine Therapy. I. W. L. Brown.—p. 1051.
*Id. S. Vincent.—p. 1053.
Id. H. Gardiner-Hill.—p. 1056.
Id. K. M. Walker.—p. 1058.
Id. H. W. C. Pines.—p. 1059.
Id. F. S. Langmead.—p. 1059.
*Erysipelas Treated by Foreign Blood Injection. N. Pines.—p. 1062.
*Early Symptom of Pregnancy. J. W. Tomb.—p. 1062.
Malaria Treatment of Tabes Dorsalis. N. F. Rowstron.—p. 1063.

Cholecystography.—Experience with fifty-three cases leads Wilkie and Illingworth to believe that cholecystography is a valuable aid in the diagnosis of gallbladder disease. When a gallbladder shadow is visible, if it is of normal density and contour, gross disease may be excluded but mild cholecystitis may be present. Gallstones casting no shadow in the ordinary roentgenogram may be shown up as negative shadows. Care must, however, be exercised not to mistake gas in the overlying colon for a gallstone. In cases in which a preliminary roentgenogram has shown doubtful shadows suggestive of gallstones, the accurate localization of the gallbladder gives confirmatory evidence, the method being thus comparable to pyelography in cases of renal calculus. The significant feature of cholecystography is that it is a means not only of demonstrating anatomicopathologic changes in the gallbladder, but also of testing the functional capacity of the organ.

Embryoma of Testis with Metastases.—Webb-Johnson relates the case of a man, aged 31, whose sole complaint was pain in the right lumbar region on movement. He was comfortable when in bed. Twenty-four hours after Johnson first saw him, he suddenly fell down and appeared to be in a dying condition. His appearance was that of a man receiving no oxygen into his circulation, although there was some shallow respiration. The pulse rapidly failed, and within about ten minutes of the appearance of symptoms he was dead. A postmortem examination was made, and since his symptoms were suggestive of pulmonary thrombosis or embolism, the thorax was examined first. Some antemortem thrombus was found in the pulmonary veins. A small, soft, almost gelatinous mass about the size of a chestnut was found in the posterior mediastinum, with the thoracic duct running through it. Exploration of the abdomen revealed the presence of a mass the size of a clenched fist in the right lumbar region, with the inferior vena cava running through it. The kidney was healthy. Palpation of the testis revealed no gross abnormality, but there was a small prominence about the size of a pea on the lower part of the body of the testis, near the globus minor of the epididymis. The testis was removed, and when it was cut across a small tumor, which proved to be an embryoma, was found. The lumbar glands were metastatic deposits from the tumor in the testis. The small mass in the posterior mediastinum was of a similar nature microscopically, and was evidently a metastasis which had been arrested on its way along the thoracic duct and had grown in that situation.

Treatment of Carbon Monoxide Poisoning.—Gordon-Watson cites six cases of carbon monoxide poisoning resulting from the explosion of ammonol, the explosive of Mills' bombs, in a confined space The patients were soldiers The cases presented certain differences, each showing some special characteristic Little effect was produced by oxygen Artificial respiration, combined with the administration of oxygen, was not tried In two of the worst cases transfusion was done with marked benefit, and the patients probably owe their lives to this measure being carried out All six patients were bled, and all recovered

Value of Endocrine Therapy.—Brown believes that thyroid, parathyroid, suprarenal, pituitary and pancreas extracts have therapeutic value, but he is skeptical as to the value of other gland extracts, except ovarian extract, with which he has obtained some good results in cases of ovarian inadequacy occurring in earlier life He feels that the unreliable character of many of the commercial products may be due to their preparation from ovaries containing a corpus luteum

Endocrine Therapy.—In Vincent's opinion, there are yet only two clear instances in which a true substitution therapy can be employed—certain lesions of the thyroid and of the pancreas, of these, only one, thyroid extract, is known to produce any effects when given by the mouth Sooner or later, he says, the parathyroid and the ovary may be included in the same category, though, according to the best evidence, the preparations of these organs which are commonly employed are inactive There are, however, two striking instances in which substances obtained from organs usually supposed to furnish internal secretions are valuable as drugs, apart altogether from the question of internal secretion and substitution therapy These are epinephrine and preparations made from the posterior lobe of the pituitary body And it is very doubtful whether any of these have any effects when administered by the mouth Vincent says that out of the long list of organs and tissues advertised by the manufacturing druggists and prescribed by the "clinical endocrinologists" to be administered in the ordinary way by the mouth, only one —the thyroid—is of proved value

Foreign Blood Injection in Erysipelas—Pines reports that he treated successfully a case of severe erysipelas of the face in a baby, aged 12 months, by intramuscular injections of the father's blood Three injections were made (into the buttock) of 15, 20 and 20 cc, respectively The blood was withdrawn from the cephalic vein of the father in a room adjoining the sickroom and injected immediately, with a fresh needle, into the child's buttock, the blood having no time to clot

Early Sign of Pregnancy.—Tomb describes a very early and constant symptom of gestation which, he says, is not mentioned in any of the standard textbooks on obstetrics In almost every case of pregnancy as early as the first week after the first intermitted monthly period, the patient will admit, on inquiry, that the labia majora feel tense and swollen, especially when she walks or sits down on a firm seat, the sensation of fulness being accompanied by occasional dull aching pains in the labia The symptom persists until about the end of the third month, when the uterus ceases to be a purely pelvic organ and rises into the abdomen

International Journal of Psycho-Analysis, London

6 367 530 (Oct) 1925

Negation S Freud —p 367
Psycho Analysis of Sexual Habits S Ferenczi —p 372
Psychology of Women in Relation to Functions of Reproduction H Deutsch —p 405
Oral Erotism S Kempner —p 419
Case of Ereuthophobia T Benedek —p 430
Formation of Symbols N J Symons —p 440

Japan Medical World, Tokyo

5: 309 340 (Nov 15) 1925

*Etiology of Typhus Fever and Measles S Kusama —p 309
Blood Transfusion in Treatment of Malnutrition R Kosaka —p 312
Historical Reviews of Study on Beriberi in Japan A Fujinami —p 314
Photo Activity of Vitamin A, Cholesterol, Fats and Other Substances by Ultraviolet Rays S Hamano —p 317

Etiology of Typhus Fever.—Kusama describes a new bacillus seen by cultivating in ascitic bouillon the kidneys of Japanese monkeys which had been infected with three strains of the passage virus of typhus The bacillus produced clinically and pathologically similar changes in Japanese monkeys as those produced by the passage virus, and there is cross immunity between this bacillus and the passage virus Injections of a large quantity of this organism, which had been made avirulent or killed with phenol conferred immunity to monkeys against the passage virus Therefore, Kusama believes that this new bacillus is the cause of typhus fever It gives a negative complement fixation with the serum of convalescent monkeys and of typhus patients

Journal of Tropical Medicine and Hygiene, London

28: 393-412 (Nov 16) 1925

Diseases Observed in Clinic of Bangkok Central Hospital R W Mendelson —p 393
Schistosomum (?) Spindalis Montgomery in Zulu Schoolboy F G Cawston —p 406

Lancet, London

2: 1153 1208 (Dec 5) 1925

Case for Unborn Child T W Eden —p 1153
Triple Puncture Lumbar, Cisternal and Ventricular J Purves Stewart —p 1159
*Diabetes and Operation Effect of Gastrojejunostomy in Case of Mild Diabetes Mellitus with Low Renal Threshold O Leyton —p 1162
Multiple Electrical Stethoscope J Hoskin —p 1164
Case of Acholuric Jaundice with Gallstones H H Gleave and R Platt —p 1165
Ruptured Ectopic Gestation E Knowles —p 1166

Gastrojejunostomy in a Diabetic Patient—Leyton relates the case of a man, aged 37, who had very mild diabetes, his glycopyretic function was of 75 per cent efficiency, and diabetes would not have been diagnosed if he had not possessed a remarkably low renal threshold for sugar At one time the urine contained quite a recognizable quantity of dextrose, while the blood sugar was below 0 12 per cent The man also had a duodenal ulcer, for which a gastrojejunostomy was performed The day after the operation, the urine contained a considerable quantity of sugar This gradually diminished, until the eighth day, when the urine was free The urine remained sugar free until the twenty-second day, when minute traces reappeared, but was quite free again later The patient's carbohydrate metabolism had been depressed by the operation The glycosuria was absent after operation in spite of a diet containing a fair amount of carbohydrate

Medical Journal of Australia, Sydney

2: 545 572 (Nov 7) 1925

Roentgen Rays as Aid in Diagnosis of Pathologic Gallbladder A S Johnson —p 545
Toxemias of Pregnancy J L Jona —p 548
Infectious Mononucleosis or Glandular Fever J G Hislop —p 557

2: 573 596 (Nov 14) 1925

Diagnosis of Normal Heart H H Turnbull —p 573
Indications for Intervention During Pregnancy R N Wawn —p 577

Medical Journal of South Africa, Johannesburg

21. 59 90 (Oct) 1925

Nutritive Value of Mealie Meal and Kaffir Corn A D Stammers —p 62
Some Common Disabilities of Feet F P Fouche —p 65
Tic Douloureux—Alcohol Injection of Gasserian Ganglion I J Block —p 68
Roentgen Ray Treatment in Dermatology L E Ellis —p 69
*Vulvovaginitis in Children Sixty Three Cases A R Fraser —p 73
Law and Doctor in South Africa H De Villiers —p 80

Vulvovaginitis in Children—The gonococcus was demonstrated by Fraser in the vulva and vagina in fifty-four out of sixty three cases The gonococcus was demonstrated in the rectum in fifty-nine cases Symptoms were entirely vulvovaginal The average age of the patients in this series was 4 7 years In only one case was there any upward spread of the infection with resulting peritonitis No other complication was noted Investigation of the origin of the disease proved unsatisfactory In twenty-seven cases, no origin could be traced In eleven cases there was some evidence of infection of the parents, while in seventeen cases servants were implicated Three patients traced contamination to the lavatory seats of railway trains following long railway journeys. In only one case was there attempted rape.

National Medical Journal of China, Shanghai

11: 309-396 (Oct.) 1925

Relation of Dental Hygiene to Health and Efficiency. B. K. Wong. —p. 309.
Sanitary Survey of Tsunhwa. C. Ku'ei.—p. 313.
Public Health Report on Canton, China. L. Ting-An.—p. 324.

South African Medical Record, Cape Town

23: 473-496 (Nov. 14) 1925

Anthropology. E. C. Randell.—p. 473.
Optic Nerve Aspect of Diagnosis of Intracranial Tumors. D. J. Wood. —p. 475.
Irradiation in Malignant Disease. F. H. Dommisse.—p. 478.
Calcium Therapy. J. Drummond.—p. 480.

Tubercle, London

7: 105-160 (Dec.) 1925

*Serology of Bovine Type of Tubercle Bacillus. W. M. Cumming. —p. 105.
Treatment of Tuberculosis: Memorandum 37. T. G. T. Hebert.—p. 111.
*Case of Tuberculous Empyema, with Recovery. A. J. S. Pinchin and N. E. D. Cartledge.—p. 115.
*Family History in Relation to Prognosis of Pulmonary Tuberculosis. A. P. Ford.—p. 117.
Results of Intracutaneous Tuberculin Test in Ontario Survey of School and Preschool Children. J. H. Elliott.—p. 122.

Serology of Bovine Type of Tubercle Bacillus.—An investigation was undertaken by Cumming to supplement the previous work of Tulloch and his collaborators, and verify their contention that human and bovine tubercle bacilli are identical serologically. The series investigated consisted of thirty-one bovine strains isolated from animal lesions—all except four isolated by direct cultural methods—and twenty-two bovine strains isolated from human lesions, all except three by direct cultural reactions and in their virulence. The investigation substantiated the assertions made by a number of investigators that tubercle bacilli of the human and bovine types are not distinguishable by agglutination or absorption of agglutinins.

Treatment of Interlobar Tuberculous Empyema.—In this case of interlobar empyema, Pinchin and Cartledge explored the chest in the third left interspace in the anterior axillary line. Thick greenish yellow pus was obtained containing tubercle bacilli but no other organisms. The following day 10 cc. of a liquefying solution containing thymol, camphor and sulphuric ether was injected at the site of previous exploration, care being taken to aspirate pus first. Two days later, aspiration was undertaken with a Potain aspirator. A second injection of the liquefying solution was made about a week later. The patient made a good recovery.

Family History in Relation to Prognosis of Tuberculosis.—An investigation of the history of more than a thousand cases of pulmonary tuberculosis was undertaken by Ford in order to ascertain whether the family history had any relation to the prognosis of the disease. There was no family history in 844 cases. In 139 cases there was a direct maternal or paternal history or both, and in seventy-nine cases there was an indirect history. Patients whose mothers suffered from tuberculosis appear to do much better than the others.

Annales de l'Institut Pasteur, Paris

39: 875-924 (Nov.) 1925

*Production of Diphtheria Toxin. M. S. Schmidt.—p. 875.
*The Plague Bacillus and Carbohydrates. R. Pons.—p. 884.
Skin Vaccination and Skin Immunity in Anthrax. Newodoff.—p. 888.
Experimental Research on Anthrax. C. Hruska.—p. 897.
*Reaction of Cells and Phagocytosis. Metalnikov and Toumanoff.—p. 909.

Production of Diphtheria Toxin in the Martin Culture Medium.—Schmidt obtained excellent results with Martin's bouillon which he has used exclusively for over a year in production of diphtheria toxin. This is the culture medium used at the Institut Pasteur at Paris. The toxic and antigenic properties of the toxin appeared superior to those of toxins prepared with Witte peptone. The toxic and flocculation properties seemed to be uniform in all the toxins prepared with the Martin culture medium.

Action of Plague Bacillus on Carbohydrates.—Pons' research was made on sixteen strains of plague bacilli isolated from clinical cases. It showed that while other bacilli of the pasteurella group induce fermentation of saccharose as well as of lactose, the plague bacillus has no fermentation action on either of them, but always induces fermentation of maltose and glucose, although without production of gas.

The Reaction of Cells and Phagocytosis.—Metalnikov and Toumanoff reiterate that immunity is based on the defensive action of the cells; they have been studying this biologic reaction in the cells of the abdominal cavity. They injected a bacterial culture or carmine into the peritoneum of guinea-pigs. The earliest response was on the part of the microphages, the maximal increase occurring three hours after the injection. The proportion of macrophages was highest on the third day after the injection, and of the lymphocytes on the fifth day. The reactivity to different agents, although similar, proved nevertheless specific or individual in the different cells and different animals. Phagocytosis was manifest in vaccinated animals earlier than in the controls, demonstrating immunization of the cells. The more they are sensitized, the more rapid and intense their reaction to defend the organism.

Bulletin de l'Académie de Médecine, Paris

94: 1075-1094 (Dec. 1) 1925

Gastric and Duodenal Ulcer in French China. Le R. des Barres. —p. 1079.
*Treatment of Surgical Tuberculosis. P. Delbet.—p. 1083
Homogenous Bone Grafts. L. Imbert.—p. 1086.
More Than One Type of Leprosy Bacillus? E. Marchoux.—p. 1091.

Iodized Oil in Treatment of Surgical Tuberculosis.—Delbet reports the results in fourteen cases of surgical tuberculosis, treated personally by Finikoff. The latter used a 10 per cent mixture of tincture of iodin in oil for intramuscular injections, given at five or seven days' intervals, at points remote from the lesion. The first injections contained each 10 cc.; the next 20 cc. The treatment lasted six or eight months. Calcium chloride was administered simultaneously by the mouth In cases with tuberculous abscesses or multiple fistulas, tuberculous hydrarthrosis or arthritis, a clinical cure resulted under Finikoff's treatment. Thus an apparently inevitable amputation was averted in certain patients. He aims to enhance the lipolytic power of the mononuclears and the proteolytic power of the polymorphonuclears.

Revue Médicale de la Suisse Romande, Geneva

45: 793-856 (Nov. 25) 1925

Iodized Oil in Roentgenography of Respiratory Tract. Guyot.—p. 793.
Erythrodermia and Jaundice After Arsenicals. Lassueur.—p. 817.
Cancer of Body of the Uterus and Radium. R. Chapuis.—p. 822.
*The Pathology of Primary Syphilis. J. Golay.—p. 832.

The Pathology of Primary Syphilis.—Golay reiterates that acquired syphilis practically always begins with a chancre. It is lacking only in cases of congenital syphilis, and in women contaminated by the fetus, in the course of the pregnancy. The lymph system is the essential route of invasion of the organism by the spirochete. Penetration of the spirochete into the blood circulation occurs ten or fifteen days before the appearance of the roseola. Golay accepts that the local or skin immunity is established before the general immunity. A positive Wassermann test does not testify to septicemia, nor to general immunity of the organism, but merely to a certain amount of spirochete toxins in the blood. In the patients treated in the first ten days after the appearance of the chancre, recurrences were noted in 16 per cent; in those treated from the tenth to the twentieth day, in 34 per cent; from the twentieth to the thirtieth day, in 45 per cent; from the thirtieth to thirty-fifth day, in 60 per cent. The appearance of a positive Wassermann reaction in the primary stage of syphilis is not an important date from the standpoint of pathology or therapeutics, as it is not connected with either the septicemia or the general immunity.

Journal de Chirurgie, Paris

26: 257-368, 1925

*Serous Cysts in the Kidney. M. Laquière.—p. 257.

Serous Cysts in the Kidneys and Conservative Treatment.—Laquière reports five cases of serous cysts in the kidney in women between 31 and 67, in four of which he applied conservative measures. In the fifth case the kidney had to be removed as the cyst had calcified and the hemorrhage at the operation could not be arrested otherwise. The diagnosis in this case had long been Pott's disease. Excision of the cyst in the other cases was followed by complete recovery. One had been noted for twelve years and was as large as two fists when removed. Examination a year later showed no evidence of renal insufficiency.

26: *369-480,* 1925

*Exophthalmic Goiter. A. Troell.—p. 369.

Diagnosis and Treatment of Exophthalmic Goiter.—Troell analyzes the outcome in forty-one cases of exophthalmic goiter and in other forms of goiter, to a total of 100 cases, representing 139 operations. Patients with adenomatous goiters and symptoms showing toxic action derive great benefit from the intervention, as the risk in these cases is minimal while the mechanical and disfiguring disturbances are liable to be great. He remarks that these patients run scarcely any risk of the condition developing into grave exophthalmic goiter, but the basal metabolism should be investigated before undertaking any operation. With exophthalmic goiter of the diffuse type, under watchful waiting, repeatedly recording the basal metabolic rate, temporizing may be advisable at first, but if the rate rises and the symptoms are severe, delay only enhances the dangers of the operation. Cautious intervention in several stages gives notably better results than a single radical operation. The exophthalmos is no criterion as to the severity of the case; the metabolic rate may be influenced by worry. The systolic blood pressure is only moderately increased in exophthalmic goiter, but an increase in the differential pressure seems to be constant, and is valuable in differential diagnosis as the systolic blood pressure is not high with adenomatous or nontoxic goiters. The blood pressure usually parallels the basal metabolism, but the influence of age must be taken into account, as also the weight and the general nervous condition. If the extremely nervous condition cannot be tranquilized or if the weight continues to decline, he refrains from operating, regardless of the metabolism. On the other hand, he has operated successfully in cases with basal metabolism rate up to 105 per cent.

Presse Médicale, Paris

33: 1601-1616 (Dec. 5) 1925

*Duchenne's Contributions to Neurology. G. Guillain.—p. 1601.

Duchenne's Contributions to Neurology.—Guillain devoted the first lecture in his university course to the French neurologist G. B. Duchenne, 1806-1875. He cited Duchenne's pioneer work on the value of localized electric reactions in the prognosis of paralysis. Also his research on anterior poliomyelitis; acute spinal paralysis in adults; pseudohypertrophic muscular paralysis; progressive locomotor ataxia; and his study of the rôle of the facial muscles in the expression of passions. Duchenne also opened the way for modern electrotherapy. He was never officially connected with any medical faculty.

Revue de Chirurgie, Paris

63: 563-639, 1925

*Radiologic Examination of the Uterus. P. Mocquot.—p. 563.
*Primary Suture for Wounds of the Skull. M. Béraud.—p. 576. C'cn.
*Sympathectomy in Treatment of Epilepsy. V. Bojovitch.—p. 608.
Tuberculous Nature of Certain Hydroceles. Cartier and Godard.—p. 617.

Radiography of the Uterus.—Mocquot describes with illustrations his technic for filling the cavity of the uterus with iodized oil, and various instances of its successful application. In one case, for example, the uterus felt hard and round, and old parenchymatous metritis was accepted as the explanation of the repeated uterine hemorrhages, until roentgen examination with the opaque oil revealed a large indentation on one side. This corrected the diagnosis to tumor, and the myoma was easily enucleated. His three years of research have apparently confirmed the harmlessness of the procedure with ordinary caution; there was never a trace of a peritoneal reaction even when the oil had passed through the tubes into the peritoneum.

The Fate After Trephining.—Béraud's reexamination of seventy-two patients that had been trephined for war wounds has justified his confidence in primary suture and the ultimate outcome. He warns that with skull wounds, the lesions almost invariably surpassed what had been anticipated. Devitalized tissue should be cut away with a lavish hand, every trace of a foreign body removed, and iodin applied, and then the large flap can be replaced and sutured. With early trephining and primary suture, the death rate was only 12.5 per cent, and those that survived the third month are still living, nine years later. The functional disturbances generally subsided in time. The recovery was complete in 20 per cent of his total cases.

Sympathectomy in Treatment of Epilepsy.—Bojovitch describes the complete success of decortication of the carotid artery in three of seven cases of essential epilepsy, with no return of the seizures, and remarkable improvement in the four other cases. All had previously been refractory to medical treatment, and all treatment was suppressed after the sympathectomy according to Leriche's technic. In the cured cases, the epilepsy was of twenty years' standing or from childhood; the patients were all between the ages of 23 and 32. A 5 cm. segment of the adventitia was removed through an incision as for ligation of the common carotid.

Schweizerische medizinische Wochenschrift, Basel

55: 1105-1128 (Dec. 3) 1925

*The Infant's Stomach. Hotz.—p. 1105.
Roentgen Injuries of Skin. G. Miescher.—p. 1111.
"Dold Test." H. Dold.—p. 1118.
Social Service in Hospitals. G. Ichok.—p. 1119.

The Infant's Stomach.—Hotz made a roentgen study of the stomach in infants. Thick food provokes a peristole, and the stomach appears small. Fluids inhibit the peristole and favor swallowing of air. The latter is more pronounced with drinking from the breast or bottle than with feeding with a spoon. The majority of infants who vomit have big stomachs with a large air bubble. Thickening of the food and discarding the bottle or breast feeding reduce the size of the stomach, and the vomiting.

55: 1129-1148 (Dec. 10) 1925

Cancer of the Uterus. P. Hüssy.—p. 1129.
*Contusions. Rusca.—p. 1132.
Nutritional Problems. J. Abelin and J. Waldsburger.—p. 1134.
Acid-Base Balance of the Blood. R. Feissly.—p. 1140.

Contusions.—Rusca examined animals killed by the gas pressure in explosions of dynamite. The lungs appear to be the most sensitive organ. The hemorrhages were localized around the arteries and bronchi—in the tissue connecting the easily compressed alveoli and the stiff bronchi.

Archivio Italiano di Derm., Sifil. e Ven., Bologna

1: 1-96, 1925. Partial Index

Fibrosarcoma in Skin of Knee in Small Boy. G. Bertaccini.—p. 1.
*Gilchrist's Dermatitis. U. Rebaudi.—p. 10.
Anemic Nevus; Two Cases. N. Bagnoli.—p. 52.

Treatment of Gilchrist's Blastomycetic Dermatitis.—Rebaudi's patient was a man, aged 50. The lesion covered both sides of the face, extending on forehead and neck, and long proved refractory to all measures when the man applied for treatment the fourth year. It finally yielded to local applications of an autogenous bouillon culture of the cryptococcus involved.

Pediatria, Naples

33: 1253-1308 (Dec. 1) 1925

Blood Fat in Fasting Children. L. Spolverini and A. Vanelli.—p. 1253.
Nitrogen Metabolism. Ivo Nasso.—p. 1264.
*Alimentary and Epinephrine Hyperglycemia. L. Auricchio.—p. 1274.
Complement Fixation in Tuberculosis. S. De Villa.—p. 1279.
Congenital Amyotonia. M. Miraglia.—p. 1285.
Congenital Diaphragmatic Hernia. A. Dondarini.—p. 1293.

Alimentary and Epinephrine Hyperglycemia.—Auricchio found a similar reaction to ingestion of glucose and to injection of epinephrine in the new-born as in adults.

Policlinico, Rome

32: 1665-1704 (Nov. 30) 1925

Diagnosis of Amebic Dysentery. P. Alessandrini.—p. 1665.
Hysterical Simulation of Nephrolithiasis. G. Cioni.—p. 1669.

32: 537-584 (Nov. 15) 1925. Surgical Section

Chronic Duodenal Occlusion. V. Ghiron.—p. 537.
Angioma of the Dura. G. Gucci.—p. 544.
Secondary Jejunal Ulcers. S. Gussio.—p. 557.
Primary Sarcoma of the Spleen in Young Man. G. Petta.—p. 576.

Riforma Medica, Naples

41: 1057-1084 (Nov. 9) 1925. The Internal Medicine Congress

*Function Tests of Respiratory Apparatus. G. Boeri and others.—p. 1060
*Cirrhosis of the Liver. L. D'Amato and others.—p. 1063.
*Treatment of Exophthalmic Goiter. A. Ferrata and others.—p. 1071.

41: 1109-1132 (Nov. 23) 1925

Fatal Complications of Mumps. M. Barbato.—p. 1109.
Pregnancy Toxemia. S. Delle Chiaje.—p. 1112.
The Factors in the Therapeutic Action of the Continuous Bath. I. Sacchetto.—p. 1122.
Strangulated Hernia in Infant. Andrea Martella.—p. 1124.

Topics of the Day in Internal Medicine.—The transactions of the thirty-first annual meeting of the Italian Society of Internal Medicine were reviewed in the letter from Italy in The Journal, Jan. 2, 1926, p. 51.

Ars Médica, Barcelona

1: 73-108 (Sept.) 1925

Experiences with Manoukhine's Method of Treating Pulmonary Tuberculosis. R. Dargallo.—p. 73.
Conservative Treatment of Adnexitis. M. Bonafonte.—p. 80.
*Microtest for Nitrogen. Grifols Roig and Hellmuth Hempel.—p. 84.
Stones in Female Bladder. A. Otero Sânchez.—p. 86.
Drainage of the Peritonèum. F. Domenech Alsina.—p. 93.
Present Status of Endometriomas. J. Comas Camps.—p. 96.
Present Status of Ovarian Implants. J. Vanrell.—p. 97.

Colorimeter Microtest for Nitrogen.—The method described by Grifols Roig and Hellmuth Hempel is based on the conversion of mercuric sulphate (bisulfato de mercurio) into the double salt HgI_2—2KI and into K_2SO_4. These bodies do not affect the tint of the reaction to ammonia according to Nessler's technic. The sulphate acts as a catalyzer, and the color reaction can thus be read directly.

Boletin de la Soc. de Cirugía de Chile, Santiago

3: 93-119, 1925. Partial Index

Suppuration in a Goiter. M. Matus.—p. 93.
*Epidural Anesthesia. J. L. Bisquertt and W. E. Coutts.—p. 96.
*Polycystic Kidney. Abel Fuentealba L.—p. 100.
*Embolectomy. J. Rodríguez and A. Conntant.—p. 115.

Epidural Anesthesia.—Bisquertt and Coutts have found a 1 per cent solution of procaine effectual for anesthesia in operations on the prostate, urethra, and abscesses in the inguinal region, etc. There was no general or local reaction to the epidural injections at this concentration, and no postoperative vomiting. They have applied the method in twenty cases to date and have been impressed with its absolute harmlessness.

Polycystic Kidney.—In Fuentealba's case the laparotomy revealed a number of cysts, between the loops of the intestines, all growing from the left kidney except one blood cyst in the iliac fossa. As the kidney was in complete cystic degeneration, he removed it, and the patient was freed at one stroke from the recurring pains, repeated vomiting, sense of oppression and nervousness.

Embolectomy.—Rodríguez and Conntant removed an embolus from the right femoral artery, and the impending gangrene was averted. The embolus was adherent to the walls of the artery, and extended beyond the accessible segments so that it was not completely cleared out. But the preceding conditions in the circulation were restored and there was no atrophy in the muscles on reexamination three months later. The man, aged 65, had chronic aortitis and cardiac insufficiency.

Semana Médica, Buenos Aires

2: 821-876 (Oct. 1) 1925

Fatal Sclerema in Female Infant. E. Foster and V. Giustinian.—p. 821.
Primary Pyopneumocyst in Liver. M. Cieza Rodriguez.—p. 824.
Medical Consultant in Physical Training. G. Grasso.—p. 827.
History of Medicine in Argentina. J. Túmburus.—p. 830.
The Argentine Pharmacopeia. A. J. Bandoni.—p. 853.
Irregular Outline of Pubis in Diagnosis of Syphilis. Heuser.—p. 862.

Archiv für Schiffs- und Tropenhygiene, etc., Hamburg

29: 459-622 (Oct. 15) 1925. Partial Index

*The Fight Against Malaria. B. Nocht.—p. 461.
*Isolation of Hookworm Larvae. F. Fülleborn.—p. 470.
Hemolysins in Malaria. W. Kikuth.—p. 560.
Changes in Brain and Kidneys Due to Action of Ascaris and Strongyloïdes Larvae. S. Yamaguchi.—p. 589.

The Malaria Question.—Nocht remarks that the work of the malaria commission of the League of Nations has now established a basis for comparison with conditions later, so that in future it will be possible to estimate the effects of the prophylactic measures applied. The drainage of extensive areas of marshes in Italy has not reduced the mosquito population or banished malaria. The alleged preference of mosquitoes for cattle barns rather than houses, he ascribes to the greater moisture in the air. The only European region that has actually been freed of malaria is a certain part of Dalmatia. Water is scarce and is collected in deep protected cisterns. The scanty shallow pools were sprayed with oil. The entire region has thus been freed of mosquitoes and of malaria. Conditions have also been favorable for extermination of malaria in Palestine, he adds. There is no rainfall during the malaria season, and extensive regions have been cleared of mosquitoes. The malaria commission concluded its work by advising to limit the campaign against mosquitoes to certain regions where conditions favor it. Planless spraying with oil, draining, breeding of fishes, are only throwing money away. A single overlooked breeding place may infect a whole village. The main reliance must be on thorough treatment and after-treatment of every case of malaria, and discovery and treatment of every one infected with malaria (house-to-house visitation, examination of school children, etc.), and education of the public to seek out and destroy the mosquitoes that lurk in the bedrooms and living rooms, and to protect against mosquitoes by nets and screens and white walls. Quinine as a prophylactic is advised only in exceptional cases and with the strictest surveillance. In rooms without smooth ceilings, the walls and ceilings can be sprayed regularly every eight or ten days (Giemsa). One man can thus spray a whole village in half a day. Chagas has found in Brazil that burning sulphur every eight or ten days stupefies the mosquitoes and they fall an easy prey to their natural enemies. It is inadvisable to use a spray that would drive them permanently away from the rooms, as they would only seek less accessible quarters.

Isolation of Hookworm and Other Larvae.—Fülleborn places the earth suspected of harboring hookworm in a cylinder, the bottom of which is formed of agar which is heated from below. The larvae are attracted by the heat and burrow into the agar. He gives an illustrated description of this "thermotaxis enrichment" method.

Deutsche medizinische Wochenschrift, Berlin

51: 2017-2058 (Dec. 4) 1925

Protection Against Light. L. Freund.—p. 2017.
So-Called Traumatic Neuroses. E. Stier.—p. 2020. C'tn.
*The Cerebellum and the Internal Ear. E. Wodak and B. Fischer.—p. 2022.
Liver—Syphilis—Arsphenamine. W. B. Meyer.—p. 2024. C'td.
*Blood Volume in Polycythemia. W. Lampe.—p. 2025.
Vegetative Neurosis in Infants. E. Weitbrecht.—p. 2027
*Adsorption of Alkaloids in Pills. T. Sabalitschka.—p. 2029.
The Constitution and Peptic Ulcer. W. Ruhmann.—p. 2032.
Cultivation of Spirochetes of Relapsing Fever. E. Illert.—p. 2033.
*Palpation in Pyelitis. Jungmann.—p. 2033.
Progress of Psychiatry. Bostroem.—p. 2036.
Occupational Hygiene. R. Müller.—p. 2039. C'tn.
Social Service in Hospitals. F. Goldmann.—p. 2040.
Medical Expert Testimony. P. Horn.—p. 2042.
Professional Secrecy. F. Riss.—p. 2044.
Venereal Disease in Children. H. Davidsohn.—p. 2055. C'cn.

The Cerebellum and the Internal Ear.—Wodak and Fischer conclude from Pötzl and Schloffer's case of resection of the cerebellum (summarized in these columns, Nov. 21, 1925, page 1680), that the neocerebellum, at least, is not absolutely necessary for the vestibular tonic reflexes. The cerebrum seems to be able to substitute another mechanism.

Blood Volume in Polycythemia.—Lampe reports six cases of Vaquez' disease. The total volume of plasma may be low, normal or above normal. The average size of the erythrocytes seems to depend on their number. With normal or only slightly increased numbers per cubic millimeter, the size is large (up to 30 per cent above normal). This, together with a decreased amount of blood plasma, may be the only hematologic sign of polycythemia. When the number of the erythrocytes increases, their volume decreases—sometimes below normal. The hemoglobin index was always below 1.

Adsorption of Alkaloids in Pills.—Sabalitschka confirms that licorice powder, as used in pills, absorbs a considerable amount of alkaloids. Even after extraction with a weak solution of hydrochloric acid, the licorice retained from 25 to 44 per cent of the atropin or strychnin. Thus the dosage is quite uncertain. A mass made from dried yeast proved much more suitable for making pills than licorice powder.

Palpation in Pyelitis.—Jungmann observed a swelling of the lumbar region in two cases of pyelitis.

Klinische Wochenschrift, Berlin

4: 2329-2376 (Dec. 3) 1925

General Biology. M. Hartmann.—p. 2329.
*The Dick Test. H. Kleinschmidt.—p. 2334.
*Lipoid Arc of the Drum-Head. J. Berberich.—p. 2335.
Penetration of Dyes into the Amniotic Fluid. W. Jülich.—p. 2337.
*Water Metabolism. I. H. Marx.—p. 2339.
*Transplantation and Vital Staining. Lehmann and Tammann.—p. 2342.
*Rickets and the Constitution. A. Eckstein and H. Paffrath.—p. 2343.
*Colon Bacillus Agglutination. V. Hoffmann and K. L. Pesch—p. 2345.
Resistance of the Skin in Pregnancy. H. Hinselmann.—p. 2346.
"Importance of Lipoids." Rewald.—p. 2349. Reply. Rubner.—p. 2349.
*Chemical Diagnosis of Cancer. H. J. Fuchs.—p. 2350.
Bio-Electric Difference of Potential. A. Liechti.—p. 2350.
*Viability of Typhoid Bacilli. H. Demme.—p. 2351.
Feer's Neurosis of the Vegetative System. L. Ihm.—p. 2351.
Functional Anomalies of Smooth Muscles. L. Lichtwitz.—p. 2353.
Paravertebral Injection. F. Mandl.—p. 2356.
Blood Volume. Seyderhelm and W. Lampe.—p. 2359.
Aim of Insulin Treatment. B. Molnár.—p. 2374.
The International Public Health Service. A. Ostermann.—p. 2375.

The Dick Test.—Kleinschmidt tested for toxins the streptococci obtained from five scarlet fever patients and four with streptococcus septicemia. Four of the former and one of the latter strains produced toxins which seemed to be identical. He confirms the neutralizing action of the serum from Dick-negative subjects. About one quarter of serum added to the toxin solution neutralized it. Commercial antistreptococcus serums (Höchst) have failed so far in this respect. He made the Dick test in measles, and found only seven positives among twenty-two tested. The results were analogous to the tuberculin anergy observed in measles.

Lipoid Arc of the Drum-Head.—Berberich examined histochemically the white crescent on the ear drum which has been described in elderly subjects. It contains esters of cholesterol and neutral fats, and is perfectly analogous to the lipoid arc of the cornea. He found it in more than 200 patients, of all ages, who had hypercholesteremia. Recurring occlusion from cerumen and presbycusis are the most frequent ear disturbances connected with hypercholesteremia. Tinnitus in patients with hypertension is also probably in some relation to it. A lipoid arc of the drum-head and of the cornea can be found in almost every case of hypertension.

Water Metabolism.—Marx determined the hemoglobin content of the blood at short intervals after ingestion of water. He found a rapid dilution of blood followed by a relative inspissation and a secondary dilution. This occurred even after small quantities (50 cc.) of water, although the dilution of the blood (7 per cent) showed that almost 350 cc. of fluid had entered the circulation. The reaction was more pronounced after drinking a 0.5 per cent salt solution, and it was negative after solid food.

Transplantation and Vital Staining.—Lehmann and Tammann had negative results with simple homoioplastic skin grafts in white mice. The results were much better when they had blocked the reticulo-endothelial cells of the host by injection of trypan blue.

Rickets and the Constitution.—Eckstein and Paffrath's observations in rats speak for a congenital predisposition to rickets. It was transmitted by the female.

Colon Bacillus Agglutination.—Hoffmann and Pesch found the agglutination test of no value for diagnosis of infection by colon bacilli.

Chemical Diagnosis of Cancer.—Fuchs examined ninety-two cancer patients, and forty-eight controls. The serum from every patient with a malignant tumor digested heated human fibrin. The controls were invariably negative.

Viability of Typhoid Bacilli.—Demme found typhoid bacilli viable in various preparations of sour milk such as kefir and yoghurt. He used a combination of bile enrichment and filter paper capillary attraction for cultivation of the bacilli.

Medizinische Klinik, Berlin

21: 1829-1868 (Dec. 4) 1925

*Malaria Treatment of Paralysis. M. Nonne.—p. 1829.
*Water Metabolism in Fever. E. Pribram.—p. 1832.
*Occupational Injuries of the Eyes. A. Elschnig.—p. 1835.
*Symposium on Treatment of Syphilis. Jadassohn and others.—p. 1837.
Incarceration of Diverticulum of the Sigmoid. H. Finsterer.—p. 1841.
*Nicotine in Encephalitic Tremor. G. Herrmann and E. Wotke.—p. 1842.
Specific Treatment of Tuberculosis. W. Neumann.—p. 1844.
Idiopathic Osteopsathyrosis. F. Schwarz.—p. 1846.
*Polycythemia and Childbirth. E. Paulicek.—p. 1848.
Complement Fixation in Tuberculosis. Frisch and Starlinger.—p. 1849.
Standardization of Thyroid Preparations. M. Neve.—p. 1852.
Roentgen Reduction of Enlarged Glands. H. Holfelder.—p. 1854.
Recent Progress in Orthopedics. S. Peltesohn.—p. 1856.
Occupational Diseases Should Rank with Industrial Accidents. W. Hanauer.—p. 1864.

Malaria Treatment of Paralysis.—Nonne reviews his 450 cases of general paralysis and thirty of tabes treated with malaria infection. His opinion on the results in tabes is reserved. The 30 per cent of cures in progressive paralysis which he noted decide him in favor of malaria treatment as the method of choice in paresis. The mortality was almost 8 per cent, and especially high in patients inoculated by mistake with the tropical form. He has seen about equally good results when supplementing the malaria treatment with arsphenamin, mercury or bismuth as he saw when using the malaria treatment alone.

Water Metabolism in Fever.—Přibram attributes the retention of water in fever to the increased affinity of colloids for water. This is due partly directly to the higher temperature, partly indirectly to the increased alkalinity of the blood and perhaps of the tissues. The cleavage of the large molecules of proteins is another contributing factor to the retention of water in the tissues. Sodium chloride is retained together with the water. If the water requirement is not covered by drinking, the muscles, skin and mucous membranes supply it. The muscles lose with the water potassium, which is increased in the urine. The loss of potassium entails a lowered affinity of muscles for the water. Sahli's and Valentini's recommendation of large amounts of fluids in fever seems to be rational.

Occupational Injuries of the Eyes.—Elschnig reviews a large material concerned with occupational injuries of the eyes. The frequency of accidents to the eyes is much larger on Saturdays than on Tuesdays. An ointment containing oxycyanide of mercury (1:5,000) should be applied immediately, before the patient goes to the physician. The protective eye glasses are not ideal, but necessary. A physician should enlighten the workers repeatedly as to the dangers.

Symposium on Treatment of Syphilis.—The editors publish the opinion of prominent syphilologists on the various aspects of prevention and treatment of syphilis.

Nicotine in Encephalitic Tremor.—Herrmann and Wotke's patient, a young man suffering from postencephalitic tremor, without rigidity, was able to write after smoking a cigarette. Nicotine tartrate had no effect in doses of 2 mg. Injections of an infusion from 0.1-0.2 Gm. of tobacco produced the same effect as smoking. The action was similar, although not so perfect, in eleven of fourteen other cases. Two of the three who were not benefited had true paralysis agitans. Rigidity was not influenced.

Polycythemia and Childbirth.—Paulicek reports on a normal labor in a woman suffering for seven years from polycythemia (Vaquez type). The blood condition improved for some time after delivery.

Münchener medizinische Wochenschrift, Munich

72: 2089 2132 (Dec 4) 1925

*Biologic Significance of Lipoids H. Much.—p 2089.
*Fragility of Erythrocytes in Syphilis. E. Brill—p 2091.
Congenital Syphilis of the Aorta, and Transmission by the Sperma. T. Hausmann—p 2093 C'tn.
*Gas Metabolism H W. Knipping—p. 2095.
Feeding with Silo Milk. Oertel and F. Kieferle.—p 2097.
Athletics and the Metabolism. P. Schenk—p 2100. C'cn.
Bed Rest in Heart Disease K. Grassmann—p. 2104
*Scoliosis. J. Fraenkel—p 2107.
Fight Against Tuberculosis in Children. Klein—p 2113.

Biologic Significance of Lipoids.—Much reviews the history of the problem. He published fifteen years ago the proofs that lipoids are capable of inducing the formation of antibodies, that they act more strongly in combination with proteins, and that only certain fats can act as antigens, and even then only in combination with proteins. Most of these facts have been rediscovered lately by Landsteiner, Sachs and Klopstock While, a short time ago, he was the only one who claimed antigenic properties for lipoids, he now begins to fight for acceptance of such properties for pure proteins, which he claims to have also proven.

Sedimentation Speed and Fragility of Erythrocytes in Syphilis.—Brill found in the majority of patients with secondary syphilis an accelerated speed of sedimentation and increased osmotic resistance of the erythrocytes.

Gas Metabolism.—Knipping absorbs the expired carbon dioxide in potassium hydrate, and measures it in the spirometer, after driving it out with sulphuric acid. By this method the respiratory quotient may be easily determined with the clinical spirometers.

Scoliosis.—Fraenkel describes the details and the encouraging results of treatment of scoliosis with rest in a plaster cast-bed, alternating with special exercises.

Wiener Archiv für innere Medizin, Vienna

11: 425-580 (Nov. 1) 1925

Partial Bundle Branch Block. D. Scherf and C Shookhoff—p 425.
*Cause of Cheyne Stokes' Breathing R. Singer.—p 441.
*Shifting of Pleural Effusions R Lenk—p 459
*Childbirth in Chronic Leukemia. R. Chiari and F Dautwitz.—p 475.
Diuresis Test with Mineral Water. W Edelmann—p 485
Atypical Tuberculosis with Myeloid Leukemia H. Krasso and H Nothnagel.—p 507.
*Bacteriophage Treatment of Pyelitis E Zdansky—p. 533.
*Trypsin Flocculation in Serum P. Saxl and A Kelen—p 549.
*Water Metabolism and the Reticulo-Endothelial System P. B. Jochweds—p 561.
*Insulin and Pregnancy Glycosuria H. Elias et al—p 567.

Cause of Cheyne-Stokes' Breathing.—Singer reviews the evidence speaking for disturbances of the circulation in the respiratory center as cause of Cheyne-Stokes' breathing. He obtained good therapeutic results with intravenous injections of strophanthin. Lobelia and epinephrine afforded temporarily rapid relief.

Shifting of Pleural Effusions.—Lenk demonstrates the diagnostic value of the shifting of pleuritic effusions. He observed it by means of the roentgen rays in fifteen of seventeen cases immediately after changing the patient's position from the erect to the reclining position. Raising the pelvis of the patient was also of value in this investigation.

Childbirth in Chronic Leukemia.—Chiari and Dautwitz report a normal pregnancy and delivery in a woman who had had myeloid leukemia for at least a year and a half. She had received radium treatment fifteen months before delivery. The mother and child felt well for at least another year

Bacteriophage Treatment of Pyelitis.—Zdansky introduced a concentrated suspension of bacteriophages into the washed bladder in cystitis. Only six of twenty patients were cured, and only three of the cured group had been treated exclusively with the bacteriophage. The dilution of the bladder contents, the colloids of the medium, and especially the rapid appearance of a strain resisting the action of the bacteriophage were the principal grounds for the failures The maximum concentration obtainable in cultures of these strains is usually lower than that of the original strain, but it may be higher.

Trypsin Flocculation in Serum.—Saxl and Kelen mixed progressive dilutions of serum with a 1 per cent solution of trypsin in physiologic solution of sodium chloride, with addition of 0 5 per cent tricresol When the mixture was incubated for twenty-four hours, a precipitate formed with normal serums up to a dilution of 1:400 or 1:800. The index was higher (sometimes over 1:50,000) in certain pathologic conditions, especially grave diabetes. Cancer, pregnancy, tuberculosis, decompensated heart disease and nephritis sometimes had a high titer. Subcutaneous and intravenous injections of trypsin or of milk had little influence on the antitryptic titer. Ligation of the pancreatic duct lowered it in four dogs and brought it down to zero in a fifth. Extirpation of the pancreas has a similar effect The administration of trypsin by mouth increased the titer considerably. It increases also after meals.

Water Metabolism and the Reticulo-Endothelial System.—Jochweds injected 10 c c. of a colloidal silver intravenously. A subsequent (in ten minutes) ingestion of 1 liter of water produced a hydremia in these patients, and elimination of water was slow. These changes were especially pronounced in patients with a tendency to edema He attributes such phenomena to a blocking of the reticulo-endothelial system.

Insulin and Pregnancy Glycosuria.—Elias, Gudemann and Roubitschek found that small doses of insulin increase at times the blood sugar There is no difference between the alimentary glycemia in pregnancy and in normal controls, only the threshold of elimination is lower in the former. This alimentary hyperglycemia responds to insulin less in the pregnant than in the controls

Wiener klinische Wochenschrift, Vienna

38: 1325 1348 (Dec 10) 1925

The London Cancer Research K Nather—p 1325
*Exclusion of Sympathetic of Testis Arteries K Doppler—p 1327
Roentgen Treatment in Anuria and Oliguria J Sahler—p 1330.
Injuries from Electricity P Schneider—p 1333
Subcutaneous Prolapse of Intestine H Schnitzler—p 1336
Practical Organotherapy F Pineles Supplement—pp 1 24

Chemical Exclusion of Sympathetic of Testis Arteries—Doppler applied a 5-8 per cent solution of phenol on the spermatic and deferential arteries in dogs, and obtained results similar to those of Steinach He also used the method in over forty men, with three failures, and publishes short histories of five of them: four were between the ages of 25 and 48, one was 68. He observed a hyperemia of the testis, and erections, but most of all a favorable influence on the mental condition.

Zentralblatt für Chirurgie, Leipzig

52: 2753 2816 (Dec 5) 1925

The Denaturing of Alcohol G. Perthes—p 2753.
*Ligation of Jugular Vein P Riess—p 2755
Etiology of Spastic Ileus P Riess—p 2758
*Treatment of Scoliosis A. Gruca—p 2761
*The Blood Supply of the Large Intestine J B Seldowitsch—p 2765
Direct Measurable Blood Transfusion J Clemens—p 2772
"Treatment of Hydrocephalus" Drachter—p 2776
Intraneural Injection of Alcohol N N Nasaroff—p 2777

Ligation of Jugular Vein.—Riess confirms the good results from ligation of the jugular vein in pyemia following tonsillitis, as suggested by Melchior

Treatment of Scoliosis.—Gruca reports excellent results in the majority of his eighteen scoliosis patients treated with Loeffler's method (tenotomy of the erector spinae muscles, followed by a plaster of Paris cast).

The Blood Supply of the Large Intestine.—Seldowitsch found a large accessory artery of the colon (arteria colica media accessoria) in 25 per cent of his 160 necropsies.

52: 2817-2864 (Dec. 12) 1925

*Perforation of Peptic Ulcer. P. Riess—p 2818.
Kirschner's Bone Suture H. Heuss.—p 2819.
*Postoperative Acidosis W Fickenwirth—p 2821
*Treatment of Chronic Arthritis V Chlumsky.—p 2825
*Treatment of Chronic Arthritis. J Fuchs—p 2826.
Rhinoplasty Over a Silver Wire Frame. W. A Bogorodizky.—p 2830.
Fracture of the Acetabulum. P Erlacher—p 2835
"More Extensive Intervention in Breast Cancer." G Perthes—p 2837.

Perforation of Peptic Ulcer.—Riess reports a case of gastro-enterostomy with three recurring peptic ulcers. The patient returned three times—always because of a perforated jejunal ulcer. He explains it by a predisposition both to ulcers and to perforation.

Postoperative Nondiabetic Acidosis.—Fickenwirth observed within a few weeks four cases of acidosis after plastic surgical interventions on four children (three of them on bones). He attributes the grave condition (vomiting, fever, acidosis, restlessness and tachycardia) to fat embolism. Infusions of physiologic solution of sodium chloride, injections of glucose and administration of sodium bicarbonate are recommended. One of the children, who had been treated with insulin, died.

Treatment of Arthritis.—Chlumský recommends bathing the extremity for ten to thirty minutes in molasses, as hot as the patient can stand. The temperature is kept up by addition of the material, which is inexpensive, keeps indefinitely, and may be used again and again.

Treatment of Chronic Arthritis. — Fuchs claims excellent results in chronic arthritis. His method consists chiefly in application of splints which restrict the movements to those which are not painful, together with application of compressing strips which cause edema of the affected joint. He refers to his previous articles for the technic of his *streifentherapie.*

Zentralblatt für Gynäkologie, Leipzig

49: 2753-2816 (Dec. 5) 1925

*Liver Function in Pregnancy Toxemia. H. Naujoks.—p. 2755.
*"Milk Fever." R. Dyroff.—p. 2759.
Piskaček's Obstetric Maneuver. C. Keller.—p. 2763.
Low Intraspinal Anesthesia. K. Warnecke.—p. 2765.
Removal of Fumes of Anesthetic. J. Wieloch.—p. 2768.
Intracardiac Epinephrine Injections in the New-Born. Koch.—p. 2770.

Liver Function in Pregnancy Toxemia.—Naujoks found in the tetrachlorphenolphthalein test a useful index of liver function in the toxemia of pregnancy. If the dye is still circulating two, six or even twelve hours after injection, the danger is great, and it is not wise to delay the interruption of the pregnancy much longer.

"Milk Fever."—Dyroff confirms the local increase in temperature on the secreting breast. It accounts for the frequent observation of higher temperatures in the axilla.

Časopis lékařů českých, Prague

64: 1753-1788 (Dec. 5) 1925

Brown-Séquard's Syndrome in Tabes. J. Pelnář.—p. 1753.
Idem with Inverted Argyll Robertson Sign. Pelnář and J. Dédeček.—p. 1757.
*Subcutaneous Symphyseotomy. A. Ostrčil.—p. 1758.
Atrophic Infants and Hysteresis of Protoplasm. K. Švehla and C. Saitz.—p. 1760. C'td.
Comparison of Forceps Types. J. Saidl.—p. 1763. C'td.
Trachoma in Bohemia. J. Svoboda.—p. 1771.
"Flint's Symptom." S. Mentl.—p. 1776.

Subcutaneous Symphyseotomy.—Ostrčil pleads for subcutaneous symphyseotomy in multiparas with a conjugate of at least 7 cm.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 2187-2274 (Nov. 14) 1925

Appendicitis in the Elderly. A. G. J. Hermans.—p. 2188.
The Bed with Bone and Joint Tuberculosis. C. Thomassen.—p. 2196.
*Nephrosis and Nephritis Caused by Cystin. G. O. E. Lignac.—p. 2203.
Elimination of Bacteriophage by Very Young Animals. J. van Loghem and P. Peverelli.—p. 2209.
Bisegmental Innervation of Frog Muscles. S. de Boer.—p. 2212.
Remarkably Long Latent Period in Malaria. L. W. Schut.—p. 2217.

Nephrosis and Nephritis from Cystin.—Lignac comments on the close resemblance between the lesions found in seven white mice after intramuscular injection of 1 Gm. of 1-cystine in the course of three weeks and the lesions found in the kidneys of three children with cystinuria. The injected cystine formed crystals which were deposited in the spleen, liver and kidney capsules, especially the latter. In six of the mice there was actual nephrosis, and in the seventh mouse a pyelonephritis with evident tendency to calculus production.

2: 2275-2378 (Nov. 21) 1925

*Experiences in Treating Abortions. J. A. van Dongen.—p. 2276.
*Complement Fixation and the Bacteriophage. P. C. Flu.—p. 2285.
*Age at Death of Netherlands Physicians. P. A. de Wilde.—p. 2301.

Experiences with Abortion.—Van Dongen analyzes his 180 cases of retroflexion among his 1,620 abortion cases in a recent six year period. His conclusion is that the backward displacement can be safely left to its fate as spontaneous correction is the rule. Only when mechanical conditions prevent this, is interference necessary. The retroflexion should be corrected also when it had been responsible for abortion in a previous pregnancy. There were only four myoma cases in the total 1,620 abortions; cystic disease of the ovary was noted in three, and a cyst in the gland of Bartholin in seven, but none of these seemed to have been responsible for the abortion.

Hemolytic Tests with Rabbit Serum.—Flu's research was mostly with the bacteriophage (dysentery, staphylococcus, colon bacilli, plague and cholera bacteriophages), but also with bacterial extracts of other kinds. Positive fixation of complement was obtained under many conditions, and often with the serum from normal rabbits as well as from the immunized animals. Hemolytic test findings, therefore, cannot be relied on with rabbits' serum to decide any questions as to specificity.

Age at Death of Netherlands Physicians.—De Wilde states that the average age at death of 2,500 physicians (since 1861) was 59.6 years. The average for the general male population of the Netherlands for the corresponding period was 64.8 per cent. The difference is the more pronounced when we reflect that the weakly do not select the medical profession, so physicians can be regarded as picked men from the life expectancy standpoint. In a recent nine month period, the average age at death was 57.

Acta Tuberculosea Scandinavica, Copenhagen

1: *179-286, 1925*

*Dietetic Treatment of Tuberculosis. E. Lundberg.—p. 179.
*How to Save Tuberculous Infants. A. Wallgren.—p. 191.
Spontaneous Osteosynthesis in Tuberculous Hip Joint Disease. R. Hertz.—p. 196.
Test for Gold in Organic Tissues. E. and J. Keiding.—p. 200.
Elimination of Gold in Patients Treated with Sanocrysin. J. Frandsen.—p. 215.
The Circulation, the Depositing and the Elimination of Gold in Sanocrysin Treatment. H. Hansborg.—p. 255.

Formation of Para-Insulin in the Tuberculous and Regulation of the Diet Based Thereon.—Lundberg calls "para-insulin" the substance resembling insulin which he has discovered in the tissues of the tuberculous. It explains the improvement of the diabetic symptoms in cases of associated tuberculosis and diabetes, and it also explains the exceptional sensibility to insulin of the tuberculous. The discovery of the para-insulin suggested the possibility that some of the symptoms in tuberculosis may be due to an overproduction of this insulin-like substance. Tachycardia, night sweats without fever, and almost all the general symptoms of tuberculosis appear in the clinical picture of hyperinsulinism. These symptoms have been ascribed hitherto to toxemia from disturbances in the suprarenals or thyroid, but they might be due to a reaction to the formation of para-insulin. An excess of this calls for increased intake of carbohydrates. Applying this principle to the diet of the tuberculous was followed by a remarkable improvement in three cases previously refractory to the usual measures and growing worse. He gives the roentgenograms showing the steady improvement. The weight in one man of 34 increased from 51 to 80.5 Kg. in six months. He had been given 25—53—40.5 calories per kilogram, the carbohydrates forming 54 per cent of the calories at first and 32 per cent after the first two months.

Treatment of Tuberculous Infants.—Wallgren relates that of eighty tuberculous infants less than a year old at the Göteborg children's hospital, fifty were given systematic and adequately prolonged treatment with sunlight or artificial light, scrupulous hygiene and cod liver oil. Thirty-seven can be regarded as cured, no signs or symptoms having been detected during the months or longer since the close of the course. The infants are sought out in homes known to contain a case of tuberculosis, and it thus has been possible to start treatment in the very earliest phases.

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SEASICKNESS

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This study of seasickness is based on a review of the medical literature on the subject and on personal observation. It also embodies the collective experience of the ships' doctors, who have been in the service for from two to ten years on ten of our passenger steamers of the New York division.

The history of this affliction is of ancient origin. Among the early Greeks it was well known, and they attached great therapeutic value to a moderately severe attack of mal de mer.[1]

The immediate cause of seasickness is the oscillation of the ship about its various axes due to the action of the waves and to the ground swell. To this constant rise and fall, pitch and roll, is added a secondary minor factor, the fine, unremitting tremor and vibration transmitted from the engines throughout the framework and superstructure of the vessel. (In large motor ships the influence of this factor has been much reduced.) In some persons the eyes contribute a third factor, if they are kept for any length of time on the tossing breakers and milk-white foam constantly rushing by the ship.

The manner in which these factors act to produce the symptom complex known as seasickness is not very simple. Many theories and hypotheses have been advanced, among which may be mentioned the labyrinthine theory, "muscle-sense" disturbance, eyestrain, peripheral vagus-nerve irritation, and psychic stimuli.

THE LABYRINTHINE THEORY

Our equilibrium, or balance in space, is maintained by the functioning of a small bilateral group of organs, commonly referred to as the labyrinth, located in the petrous portion of the temporal bone. The labyrinth consists of two tiny cells, called the utricle and the saccule, springing from the walls of which are fine hairs immersed in a mucilaginous medium called endolymph. In this material are suspended minute crystals of calcium carbonate (otoliths). In addition to these two sacs, there are three small, semicircular canals, extending in three spatial directions. These are similarly lined with hair cells and filled with lymph, but they do not contain chalk bodies. The function of the first two (the utricle and the saccule) is to convey sensation of vertical movement, while the latter three semicircular canals register angular movement. The impulses from them are transmitted by the vestibular nerve to the nuclei of Bechterew and Deiters and to the nucleus fastigii in the cerebellum. Through these nuclei, reflex connections are made with the motor centers of the cord, midbrain and cerebellum.[2]

The labyrinthine theory holds that overstimulation of these equilibratory organs causes irradiation, or overflow, of stimuli from their own centers to other contiguous and associated centers, such as the vagus, respiratory and vasomotor, and initiates in these associated centers the objective phenomena seen in their central stimulation; i. e., vomiting, irregular breathing, dizziness, pallor and sweating.[3]

A few experimental facts may be mentioned in support of this theory. Kreidl, working with dogs, was able to induce salivation and vomiting by whirling the animals on a revolving platform. He then sectioned on each side the acoustic nerve, of which the vestibular forms a part, and after the animals recovered from the operation they were entirely immune to any effect of the gyrations of the platform.[3] This would indicate that the area of brain made silent by these nerve sections played some rôle in the production of symptoms.

Fisher,[4] experimenting with human subjects in a Bárány chair, found that continuous revolution was not so provocative of nausea and vomiting as frequent stopping and starting. He asserts that only at those times does the endolymph register movement. Like results were obtained when, by douching the ear with hot or cold water (at a temperature of 20 degrees either above or below normal body temperature), currents were set up in the endolymph at the beginning and the end of each injection. The action of the Bárány chair simulates, to some extent, the motion of a ship at sea, and because of the fact that many of Dr. Fisher's subjects became temporarily immune after many sessions, he advocated immunizing prospective voyagers by use of the revolving chair. To our knowledge, this preventive has not been tried, and its success would be doubtful, as immunity would have to be established for all spatial directions, and might not be retained at the time most needed.

To support the statement that our reaction to oscillatory stimuli is highly selective, one has only to recall the fact that many sailors get seasick on changing from one type of ship to another. During the World War a friend of mine, who had been in the K Squadron of destroyers patrolling the North Sea, and who was considered immune to the worst that Neptune could offer, was made deathly sick by the pitch of a channel steamer.[5]

James [6] noted that congenital deaf mutes were never seasick. Infants and those who have had bilateral disease of the internal ear, with destruction of the labyrinth, are similarly immune. It therefore seems rather well established that seasickness does not occur in those who, as a result of disease, operation or lack of development do not possess a complete and functioning equilibratory apparatus.[3] Birds commonly get seasick, probably because of their very highly developed and sensitive equilibratory organs. Sailors have frequently noted this phenomenon in the case of an albatross perched on a spar, and passengers coming up from the tropics with macaws and parrots often see the symptoms of seasickness in these birds. Monkeys likewise are very susceptible.

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[1] Stocker, J. R., in Allbutt's System of Medicine.

[2] Howell: Physiology.

[3] Prince, Alexander, in Nelson's Encyclopedia, Loose-Leaf System of Medicine.

[4] Fisher, Louis: Seasickness and Internal Ear Stimulation, New York M. J **106**: 542 (Sept. 22) 1917.

[5] Robson, H. H.: Personal communication to the author.

[6] James: Am. J. Otol, quoted by Stocker (footnote 1).

"MUSCLE-SENSE" DISTURBANCE

Closely related to the foregoing theory, but probably of minor importance, is disturbance of the so-called muscle sense. Only about half of the fibers in a nerve supplying a skeletal muscle degenerate after section of the posterior roots beyond the ganglions, a fact which shows that muscle is very highly supplied with afferent fibers.[7] These afferent impressions consist of three main classes: (*a*) impressions giving rise to pain, as in muscular cramp (this class does not concern us here); (*b*) impulses causing a rise in blood pressure, and (*c*) impulses which are not associated with a distinct impression in consciousness, but which enables us to localize in space the position of the limbs, head, eyes and other parts of the body. When any one is at sea, the latter impulses are being constantly excited by the continual oscillation of the ship, and confusion results from the impossibility of perfectly coordinating the irregular and unwonted stimuli. In locomotor ataxia, muscle sense is lost through destruction of the posterior cord tracts; it would be interesting to learn whether there is any diminished susceptibility to seasickness among persons with this disease.

EYESTRAIN AS A FACTOR

Eyestrain commonly produces gastric symptoms, with headache and dizziness. Some passengers will overindulge in reading and be careless in shading their eyes from the bright glare reflected from sky and water; others will stand at the rail and watch the swirling waves for long periods. Eye muscle fatigue, with resulting imbalance of the eye muscles, readily follows from so many attempts to fixate on moving objects. This condition, called ocular vertigo, is manifested by horizontal nystagmus, dizziness and headache, and later by reflex nausea and vomiting. A patient seen lately, in whom the chief complaint was vomiting, showed on fluoroscopic examination a persisting spasm of the pylorus, with no demonstrable filling defect or cap deformity; various antispasmodic remedies were used with slight improvement. He had consulted several specialists with temporary relief, but was entirely freed from symptoms after an error of refraction had been corrected; on going without his glasses, his stomach complaint would quickly return. However, eyestrain as a cause of seasickness cannot explain all cases. Blind persons[8] get seasick, and even some passengers who, immediately on boarding a ship, go to bed and thereafter remain in a darkened stateroom, are not immune.

PERIPHERAL VAGUS-NERVE IRRITATION

A fourth theory concerns itself with the manifestations of peripheral vagus-nerve irritation. Owing to the vessel's motion, the freely movable organs of the abdominal cavity, such as the stomach and intestines, make wider excursions than usual, and these with irregular frequency. Succussion-like movements of the stomach contents are set up, and, no doubt, these affect the irritability of the nervous mechanism of that organ.

Experimental stimulation of the vagus nerve has been shown to affect the two ends of the stomach differently.[9] Some have observed a relaxation of the cardia, with an increased activity near the pylorus. In this connection may be mentioned the frequent observation that persons of the "vagotonic constitution" are ready victims of seasickness. Eppinger and Hess[10] define vagotonia as an hereditary functional nervous instability characterized by hypertonus of the autonomic nervous system, of which the vagus forms the most important part. They assert that various spastic conditions, such as cardiospasm, bronchospasm (asthma) and spastic constipation, are due to this dysfunction. Nowadays, allergy is blamed for many of these ills. Atropine is advocated as the pharmacologic specific in vagotonia, and this drug, or its close relative, scopolamine, has also been found of service in seasickness.

In contrast to the theorizing of Eppinger and Hess, in favor of the neurogenic control of the smooth muscle of the alimentary tract, must be mentioned the recent observations of Alvarez in his attempt to establish the myogenic control, or the inherent autonomicity of the visceral musculature. This author's gradient theory explains many of the phenomena of reverse peristalsis. It is to the effect that the smooth muscle of the gastrointestinal tract has an intrinsic and characteristic rhythm rate of contraction, the frequency of which varies in descending ratio from the proximal to the distal end of the alimentary tube. For instance, the contraction rate for a strip of muscle removed from the cardia shows the fastest rate of all; that from the jejunum is about twenty times a minute; from the lower end of the ileum about ten times a minute, while the rate for the colon varies from five to three times a minute. Alvarez has established the fact that an area of irritation somewhere along the gastro-intestinal tract produces a contracted tonic ring from which waves or, rather, disturbances in the before-mentioned rhythmicity, are given off in both directions. An inflammatory focus, such as duodenal ulcer, brings about a distortion of the so-called cap; an ulcer in the colon produces far-reaching changes in the colonic haustrations, and an anal fissure causes a spasm of the sphincters.

An area is said to exist in the jejunum where the vagus-nerve fibers are extremely abundant; this area is so irritable that even psychic stimulation is sufficient to set up in it a zone of hyperexcitability and to produce vomiting and diarrhea, two symptoms that are very commonly associated in severe cases of seasickness.[11] In a patient with jejunal fistula, Alvarez found that unless the feeding was administered very slowly and at the exact body temperature, nausea, vomiting and colic occurred, and the patient's discomfort was relieved only by his being given a little food by mouth just before the regular feedings. This, of course, raised the tone of the upper end of the alimentary tract and nullified the effect of waves ascending from the jejunum. Similarly, in feeding patients according to the Einhorn plan of duodenal intubation, if the food is injected too rapidly nausea and vomiting are likely to occur. Appendicitis commonly causes reverse peristalsis, in all grades, from slight nausea to the vomiting of intestinal contents; likewise, volvulus of the sigmoid produces the most violent degree of peristaltic reverse. Constipation, so frequently observed on shipboard, is mainly a "nervous" phenomenon due to sudden change of environment. The tone of the rectal sphincters is greatly increased, and stagnation is almost always in the rectum. In view of Alvarez' work, irritation from such a source readily reverses the gradient, and the effects vary from slight anorexia to severe vomiting. Therefore, the importance of measures taken to prevent bowel stasis is obvious.

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[7] Stewart: Physiology.

[8] Hewitt, Graily, quoted by Stocker (footnote 1).

[9] May, quoted by Alvarez: The Mechanics of the Digestive Tract, New York, Paul B. Hoeber, 1922.

[10] Eppinger and Hess: Vagotonia, Ed. 2, New York, Nervous and Mental Diseases Publishing Company, 1917.

[11] Alvarez, W. A.: The Mechanics of the Digestive Tract, New York, Paul B. Hoeber, 1922.

PSYCHIC STIMULI

Psychic impressions play a large part in persons of neurotic disposition. There are some who become nauseated, and even vomit, if they merely go aboard ship for a few minutes to see a friend off. This effect, of course, is suffered only by those who have once been seasick. Others are made quite ill by hearing a roommate retch and vomit, or by listening to tales of similar unpleasant experiences. The smell of food to one who is nauseated is at times sufficient to precipitate an attack. In general, the psychic element is in many persons the strongest element of all, and the most difficult to overcome.

COMMENT

It is my opinion that all the various factors described in the foregoing theories play some rôle in the causation of seasickness. According to the individual susceptibility, some factors are undoubtedly more prominent than others. Labyrinthine overstimulation is probably the most potent factor in the average healthy person. However, the sum total of these effects is to deluge the brain with a bewildering flood of nocuous impressions, and the result is a condition that may be described as psychic shock. The power of inhibition possessed by the cerebral cortex over the subcortical centers plays the most important part in the establishment of immunity. A defensive reaction is set up, as a result of which the threshold values of these harmful stimuli are raised so that either they no longer register in the brain, or their registering is completely ignored. That this function of sensory inhibition of the brain is not unusual is evidenced in many ways. A familiar example is the case of those who dwell in large cities, such as New York, and whose dwellings are contiguous to the tracks of the elevated railroad. The noise of the trains passing almost constantly may be completely unnoticed by them, while it is most disturbing to a visitor. It may be said that the permanent residents are only subconsciously aware of such noises.

CONTRIBUTORY FACTORS

Passengers who embark suffering from any form of gastro-intestinal disturbance, perhaps an overloaded stomach and clogged up intestines, steadily become victims, as well as those who are nervously exhausted and below par from various excesses.[12] The indolent life of many Latin-American women makes them most susceptible, while persons who lead an active, athletic life may be entirely immune. In general, those in the extremes of life (infants or aged persons) suffer least; for the perceptive faculties of the former are immature and undeveloped and of the latter have frequently begun to degenerate. The alert man, in full possession of his faculties, probably suffers the most, but he is correspondingly better able to control and inhibit the disagreeable impressions that he receives from his labyrinth.

IMMUNITY

Immunity to the effects of a ship's motion under average weather conditions is usually established in a healthy adult after three or four days. The brain has learned to inhibit the peculiar sensations, or possibly to evaluate them better than at first, so that they no longer cause confusion. The passenger is said to have found his "sea legs." It is not a permanent immunity that is developed, but it is one that is more readily acquired on a second voyage than on a first. After many voyages, complete freedom is to be expected; always excepting, of course, slight relapses due to severe weather conditions.

NONIMMUNES

A few unfortunates never get over seasickness. Some sea captains are known to be sick every time they cross the ocean. History affords a famous example in the case of Lord Nelson. In one case known to me, susceptibility to this malady was a definite family trait. This officer's father followed the sea for sixty years and was always subject to mal de mer; his three brothers, who were also seafaring men, were similarly afflicted, one so badly that finally he had to choose another profession.[13]

TABLE 1.—*Incidence of Seasickness in the United Fruit Company's Steamship Service, New York Division*

Year	Total Number Carried		Total No. of Cases of Seasickness		Per Cent	
	Passengers	Crew	Passengers	Crew	Passengers	Crew
1923	30,283	12,639	210	53	0.69	0.41
1922	30,030	14,057	152	41	0.50	0.28
1921	31,085	14,800	127	16	0.40	0.10
1920	36,028	12,869	151	29	0.41	0.22
1919	25,140	9,173	171	62	0.68	0.68
1918	17,650	10,880	124	29	0.70	0.26
1917	29,708	14,913	127	26	0.42	0.17
1916	21,204	12,306	172	51	0.81	0.41
1915	33,968	14,493	155	19	0.45	0.13

In my experience, many conditions have been found responsible for this nonimmunity; among them may be mentioned low grade chronic inflammatory foci in the gastro-intestinal tract (e. g., chronic appendicitis, colitis, diverticulitis, gallbladder disease), anatomic malformations and congenital anomalies (e. g., Lane kinks and Jackson membranes), improperly balanced diets[14] and heredity.

It is strange that many of these persons should uncomplainingly bear this cross without attempting to seek the underlying basis of their weakness. Perhaps they do so because of a subconscious dread of ridicule, for since time immemorial the seasick sufferer has been the butt of gibes and jests. Why it is that his more fortunate fellow men should belittle him for a possibly inherited inferiority of the adaptive mechanism of his brain is puzzling.

The fact is well established that great relief can be given to many of these chronic sufferers by the correction of defects that a thorough general examination, including a roentgen-ray study of the gastro-intestinal tract, may reveal. In some cases, dietary and hygienic regulation have been sufficient.

INCIDENCE

The incidence of seasickness is clearly shown in the accompanying tables.

It must be noted that these represent only the severe cases, which seek medical attention; the majority of light cases do not get into our records at all.

Mortality has been nil in both these series.

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[12] Belli, C. M.: Personal Hygiene of Aviators, U. S. Navy M. Bull. **17**: 39 (July) 1922.

[13] Livingston, A. D.: Personal communication to the author.

[14] Deeks, W. E.: Personal communication to the author.

SYMPTOMATOLOGY

The symptoms of seasickness are too well known to merit detailed description. Suffice it to list the following, which may come on in an ordinary case, from six to thirty-six hours after departure, normal weather conditions prevailing: discomfort in the epigastric region, varying with the rise and fall of the ship; anorexia; salivation, with frequent swallowing movements; headache, dizziness; weakness, progressing to faintness; cold perspiration of the skin, and pallor of the face, with the oft-described greenish hue. The facial expression, which is one of great dejection and apathy, faithfully records the internal feelings. Waves of nausea finally get so strong that the desire to vomit is overwhelming, and after that act is consummated great relief is experienced. The vomiting is very often projectile in character, and there may be little or no nausea preceding. Objectively, one usually finds a strong, slow pulse with increased blood pressure in the early stages, and later a lowered blood pressure with rapid pulse.[15]

TABLE 2.—*Case Incidence and Annual Rate per Thousand for "Nausea Marina" in the United States Navy* *

Year	Number of Cases	Annual Rate per Thousand
1921	44	0.30
1920	30	0.21
1919	352	1.18
1918	509	1.01
1917	91	0.37

* Butler, C. S., in Forchheimer's System of Internal Therapeusis.

As stimulation of the horizontal semicircular canals is the least objectionable, passengers soon learn that the recumbent position is most comfortable. They should select the midship region of the ship, where the motion is minimal, and the weather side of the vessel, as the wind is fresher there and in small ships not so apt to convey an undesirable odor from the galley. Cases that persist in spite of these precautions, and after the application of simple remedial measures, demand careful examination. A slight preexisting cardiac incompetence may be aggravated by the efforts of vomiting and may cause a passive congestion of the abdominal viscera, with deficient oxygenation of those tissues. This has been shown to be productive per se of nausea and vomiting, both experimentally and clinically.[11] Careful questioning and search must be made to rule out chronic inflammatory foci, as well as kidney calculus and other diseases of the urinary tract. In women, diseases of the uterus, tubes and ovaries are very likely to cause prolongation of symptoms, and pregnancy in the early months may be an exciting factor, but is usually not such in the later months. It may be interesting to note here that one writer[1] thinks the likelihood of conception is increased by a voyage in which slight seasickness is experienced. This, we think, is due rather to the exhilarating and tonic effects of the usual sea trip.

COMPLICATIONS

In healthy persons, there are no complications. Patients with gastric or duodenal ulcer or with gallstones may, from excessive vomiting, develop complications of these diseases. Patients suffering from chronic affections of the heart, kidneys and lungs are usually benefited by sea voyages if they do not, in their new environment on shipboard, overstep the limit of their physical endurance.[1] Sidney Jones,[16] surgeon on the *Aquitania,* writes that he has noticed acidosis and acetonemia, especially in pregnant women and in children who had a previous history of cyclic vomiting. This was so frequently noted in all cases, however, that he thinks seasickness may be due to these conditions. He institutes an antiketogenic regimen, and there is immediate improvement in the patient's condition. Our experiences have not been quite similar to his, for we have noted acidosis only late in severe cases. Certain complications of preexisting ailments are said to occur more frequently on shipboard than on land; e. g., delirium tremens in an alcoholic patient, and insanity, particularly a monomania with suicidal tendencies; but these are extremely rare.

TREATMENT

The great majority of passengers can avoid seasickness by adopting, a week or so before sailing, a few rules of hygiene and diet. Abundant sleep must be obtained to place the central nervous system in as good a functioning condition as possible. Exercise in the open air, especially for those who ordinarily spend most of their time indoors, is important to prepare for the fresh and stimulating air of the marine climate, and to tone up the reflexes, both muscular and visceral. Horseback riding and aquatic sports are especially to be recommended. Avoidance of excesses of all kinds is, needless to say, important.[17]

Proper bowel elimination should be achieved by exercise and diet and, if necessary, a laxative dose of sodium phosphate, 2 drachms (8 Gm.) in 6 ounces (180 cc.) of water, should be taken one hour before breakfast. Those who prefer pills may use phenolphthalein, from 1 to 2 grains (0.065 to 0.13 Gm.), or one or two vegetable laxative pills at night, before retiring. Drastic catharsis is not indicated.

The important objects in dieting are to establish a reduced hydrogen ion concentration in the blood and to store up in the system plenty of buffer substances, because of the tendency to acidosis. The salts of meats, cereal and legume foods have an acid reaction; those of sugar, fats and oils are neutral; while the salts of tubers, fleshy roots, leafy, green vegetables and fruits, especially those of the citrous variety, are alkaline. The last group, therefore, must be consumed in sufficient quantity to neutralize the acidity of the first group, and to maintain or, if possible, to increase the alkali reserve of the blood.[18] Sugar, pies, cakes, pastries, candies and other sweets should be strictly avoided, as these remain longest in the stomach and are apt to cause fermentation, with increased acid formation.

After a person embarks, the diet generally should be restricted in amount and should be limited to those articles that appeal most to the appetite. These have been shown to increase the tone of the upper end of the alimentary tract and to favor normal peristalsis. In general, little fluid should be taken at meals, but plenty between meals, such as clear bouillon in the forenoon and weak tea in the afternoon. A laxative pill at night, or soda phosphate in the morning, is usually necessary to secure evacuation daily. Most of the time should be spent on deck, and the mind should be kept actively engaged in some diversion. Deck games are excellent, and cards may serve the less energetically inclined. A moderate indulgence in alcohol and tobacco, by those accustomed to their use, is not contraindicated.

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[15] Cazamain, quoted by Butler, C. S., in Forchheimer's System of Internal Therapeusis.

[16] Jones, Sidney: Seasickness, Brit. M. J., Jan. 17, 1925.

[17] Belli, C. M.: Personal Hygiene for the Aviator, U. S. Navy M. Bull., September, 1917.

[18] Deeks, W. E.: A Brief Review of the Digestive Functions and Food Requirements for the Maintenance of Health, with Particular Reference to the Tropics, Harvard Lecture, Jan. 11, 1923.

CASE TYPES

When symptoms of seasickness occur, an attempt should be made to discover which one of the five main factors previously discussed is operating, or, if more than one, which is operative to the greatest extent. The reason why advertised seasickness remedies so often fail is that they are usually directed against only one factor.

Let us suppose the case of a healthy passenger who has taken proper care of the bowels, has eaten moderately, and has become seasick just as the vessel encounters rough weather. Such a case is clearly due to the labyrinthine factor. Drugs of the belladonna group combined with strychnine are strongly recommended by many, under these conditions. Girard[19] advocated the use of atropine, 1/120 grain (0.5 mg.), with strychnine sulphate, 1/60 grain (1 mg.), subcutaneously, at the beginning of a voyage, during rough weather, or on the advent of a storm; this dose to be repeated twice, at hourly intervals, or until incipient dryness of the throat and disturbance of vision indicate its discontinuance. The advantages of the hypodermic method of administration are the certainty of assimilation and the freedom from cumulative action. The pharmacologic action of atropine is to stimulate the cerebral and vital medullary centers; strychnine also aids in this respect, but chiefly counteracts the depressing effect of atropine on the secretory nerve endings in the stomach and the intestinal tract.[20] As the development of immunity to seasickness is shown to be a quality of the brain, agents that tend to improve its circulation and increase its function may logically be presumed to aid in this respect.

In our experience we have secured better results with scopolamine hydrobromide, a close relative of atropine. It is given in small doses and is frequently repeated, in order to discover the idiosyncratic patient before much of the drug has been taken, and to secure maximal sustained effect with the minimal amount of medication. Our routine drug treatment in mild cases of seasickness is 1/400 grain (0.13 mg.) scopolamine hydrobromide, by mouth, every hour until the patient is relieved or until the physiologic effects are obtained. A simple way to give this is one teaspoonful every hour of a mixture containing scopolamine hydrobromide, 1/50 grain (1.3 mg.); spirit of peppermint, 3 minims (0.2 cc.); elixir of lactated pepsin, sufficient to make 1 ounce (30 cc.). In cases with much depression, strychnine sulphate, 1/60 grain (1 mg.), is added to the mixture, and for severer cases with much vomiting scopolamine and strychnine are given by hypodermic injection. As the psychic element enters into nearly every case, a centrally acting hypnotic is usually necessary; for this we use chlorbutanol, from 5 to 10 grains (0.3 to 0.6 Gm.) in capsules, repeated in six hours if necessary. Besides inducing sleep, this remedy has an anesthetic action on the gastric mucosa. A convenient way of dispensing chlorbutanol, together with the previously mentioned drugs, is to place the tablets in the capsule with the chlorbutanol, and all three may be taken together. Other hypnotics that may be used, instead, are barbital from 5 to 15 grains (0.3 to 1 Gm.); barbital sodium, from 5 to 15 grains (0.3 to 1 Gm.); phenobarbital, from ½ to 1½ grains (0.03 to 0.09 Gm.); sulphonethylmethane, from 5 to 10 grains (0.3 to 0.6 Gm.), or sulphonemethane, from 5 to 10 grains (0.3 to 0.6 Gm.).

There are cases of seasickness with intense headache, almost suggesting the postlumbar puncture headache, with slight rigidity of the neck and great disinclination to move. There may be little or no nausea and vomiting. We have been experimenting with pituitary extract in these cases, but have not observed a sufficient number of cases, as yet, to warrant an opinion. The rationale of this treatment is predicated on the assumption of a diminished amount of cerebrospinal fluid, and advantage is taken of the well known action of pituitary extract to increase the rate of production of cerebrospinal fluid, through stimulation of the secretory activity of the choroid plexus. Other observers[21] have used nitroglycerin in the form of spirit of glyceryl trinitrate, 1 minim (0.06 cc.) every hour, on the assumption that there exists an anemia of the brain.

There is another type of seasickness in which the gastro-intestinal tract is the principal disturbing factor. Vagotonic, asthenic and visceroptotic persons, and those suffering from chronic constipation and other low grade, chronic intra-abdominal ailments, are constantly nauseated, have no appetite, and feel weak and apathetic most of the time. On examination, they usually show a heavily coated tongue and other evidences of disturbed digestive function. It is to be noted that in the first type of seasickness discussed, the tongue is usually clean, as the vomiting is of central origin.

The treatment here must be directed first to the alimentary tract. Thorough lavage of the stomach should be effected by making the patient drink large quantities of warm water with sodium bicarbonate, and emesis is produced by tickling the pharynx. A final glass should contain a compound effervescing powder, which the patient must endeavor to retain. Thereafter, there must be absolute rest until the bowels have operated well; a small enema may be necessary to start the bowel action. As the conception of the condition is one of delayed waste material in the bowels, with reflex delay in gastric emptying, our efforts should be directed to prevent this condition. We recommend fluid extract of cascara sagrada in sufficient dosage, three times a day; 1/60 grain (1 mg.) of strychnine, three times a day, and a diet small in bulk and easily assimilated. Such a diet may include milk, toast, ice cream, cereals, boiled eggs, stewed fruit, puréed vegetables and a little chopped chicken or other meat. Rest in a recumbent position for one hour after each meal is very helpful.

Visceroptotic persons are benefited by a supporting belt, possibly more so at sea than ashore. It is chiefly the comfort given this class of persons that has given credence to the advertisements of an elastic belt as a "seasick cure." At sea, the same result may be achieved by applying an adhesive plaster support, according to the directions of Dr. I. H. Levy.[22]

The psychic element is always present in seasickness, and in some neurotic persons it may be the chief factor. Mental diversion is the most valuable remedy; the less these persons think about their symptoms, the better off they are. The simple prophylactic measures previously discussed may be all that is necessary; but usually bromide, as in the following prescription,[23] is indicated: hydrated choral, 1 drachm (4 Gm.); strontium bromide, 5 drachms (20 Gm.); spirit of anise, 15 minims

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[19] Girard, A. C.: Atropin and Strychnin Combined, A Specific for Seasickness, J. A. M. A. **46**: 1925 (June 23) 1906.

[20] Bastedo: Pharmacology and Therapeutics.

[21] Nolan, H. O.: Personal communication to the author.

[22] Levy, I. H., quoted by Kantor: Treatment of the Common Disorders of Digestion, St. Louis, C. V. Mosby Company, 1924.

[23] Lockwood, G. R.: Diseases of the Stomach, Philadelphia, Lea and Febiger, 1913.

(1 cc.); chloroform water, sufficient to make 4 ounces (120 cc.). Of this, one teaspoonful is to be taken every four hours.

USE OF COCAINE

Cocaine in seasickness is much advocated by some continental writers, but we do not advise its use, on account of its general poisonous action, the frequency of undesirable idiosyncrasy, the danger of habit formation, and occasional sudden collapse. The packing of the external auditory canals with gauze has been alleged by some to be curative.[24] The good results reported by Lemon for this procedure were chiefly in shell-shocked soldiers returning from overseas. The benefit obtained, we think, is chiefly psychic. The practice of taking a deep inspiration as the ship descends, and of holding it until the vessel again rises, is recommended by Wollaston.[25] It serves the double purpose of regulating voluntarily the rate of respiration, and of steadying the abdominal viscera by the splinting action of the abdominal muscles as the glottis is held closed.

VOMITING IN EXCESS

Cases of excessive vomiting that tax our efforts at control are occasionally encountered. After the usual remedies are tried, including the mustard plaster applied to the epigastrium, from ⅛ to ¼ grain (8 to 16 mg.) of morphine sulphate, administered hypodermically, combined with from $\frac{1}{200}$ to $\frac{1}{150}$ grain (0.3 to 0.4 mg.) of atropine sulphate, is the court of last resort. Provision must be made for the curious fact that the drug most potent in checking vomiting is followed by vomiting as a common after-effect.[26] After the patient awakes from the sleep induced by the drug, he should be directed not to raise his head from the bed for several hours. Iced brandy, champagne or strong coffee, may be given through a drinking tube, but if nausea reasserts itself it is best to continue the administration or morphine, combined with atropine, in progressively descending dosage, using perhaps every four hours half the previous dose. If neither food nor water can be retained in the stomach for twelve hours or so, no time should be lost in resorting to rectal alimentation. The only substances of food value that can be absorbed from the lower intestine are amino-acids, simple sugars and alcohol. The old method of trying to maintain nutrition by the introduction of ordinary foodstuffs through the rectum has been shown to be inefficacious.[27] Skimmed and pancreatinized milk may be used, or the clysma suggested by Smithies:[28] alcohol, 50 per cent, 1 ounce (30 cc.); glucose, 1 ounce (30 cc.); physiologic sodium chloride solution, sufficient to make 8 ounces (240 cc.). Karo corn syrup is a concentrated solution of practically pure glucose and is easily obtainable. This injection should be administered at body temperature by the drop method, with the patient on his back and the hips elevated; it should be repeated two or three times during the day. A bulk of 10 ounces (300 cc.) should not be exceeded. Needless to say, feeding by mouth should be resumed as soon as possible, commencing with such easily digestible articles as milk, bouillon, tea, ice cream and arrowroot crackers.

CONCLUSION

These three kinds of seasickness have been presented as rather distinct and clearly defined types, to emphasize the most appropriate lines of treament, but it must be remembered that they all merge and overlap in varying degrees. As in other illnesses, the most successful results are achieved through earnest work by the physician and interested cooperation from the patient.

The purpose of this article will have been served if it stimulates a more critical spirit of inquiry into the subject of seasickness by the ships' doctors of the various steamship companies, and if it is the means of freeing from one of the terrors of the deep a large number of "those who go down to the sea in ships."

SUMMARY

Seasickness in the healthy adult is usually due to excessive stimulation of the labyrinth. Its effects on the body as a whole are most plausibly explained by radiation of these stimuli from their receptive center in the brain to other associated centers, as the vasomotor, respiratory and vagus. There are several other factors that may enter into the problem. These are eye muscle fatigue, muscle sense disturbance, reflex irritation from the gastro-intestinal tract, and neurotic or psychic reactions in certain types of individuals.

In treatment, the main reliance is placed on scopolamine and strychnine. In addition, we find useful chorbutanol or some other centrally acting sedative hypnotic.

In combating the contributory factors, attention must be given to proper diet and bowel elimination.

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[24] Butler, C. S.: Forchheimer's System of Internal Therapeusis.

[25] Wollaston, quoted by Stocker (footnote 1).

[26] Fantus, Bernard: Treatment of Vomiting, J. A. M. A. **81**: 17 (July 7) 1923.

[27] Kantor, John: Treatment of the Common Disorders of Digestion.

[28] Smithies, Frank: A Treatment of Gastric Ulcer, Based upon Established Clinical, Histopathological and Physiological Facts, Am. J. M. Sc. **153**: 556 (April) 1917.

POLLEN THERAPY WITH PROTEIN-FREE EXTRACTS

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Grove and Coca[1] called attention to the fact that ragweed pollen extracts may be freed from their protein content and yet remain active, as determined by skin tests on sensitive persons. One of us[2] has reported similar results and shown that, after the removal of all protein, the pollen extract remains quantitatively active, as determined by the instillation of the extract into the nostrils of a sensitive person. It was also shown that the component which acts as the antigen when pollen extracts are used in complement fixation tests is removed by protein digestion and, while the extract is no longer antigenically active, its symptom producing power is undiminished. Evidence was presented that the nitrogen content of extracts does not parallel the activity of the pollen intranasally.

Additional verification of the latter statement may be found in the following: A well known biologic house made extracts of ragweed pollen, using 1 per cent and 5 per cent concentrations, respectively. The source of the pollen and the technic of preparation were identical. When the solution was tested, it was found that the 5 per cent extract contained only three times as much nitrogen as the 1 per cent preparation. These two preparations were referred to us for intranasal testing. The tests showed that the 5 per cent extract, instead of being only three times as active, as was suggested by the relative nitrogen contents, was actually ten times as potent.

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[1] Grove, Ella F., and Coca, A. F.: Proc. Soc. Exper. Biol. & Med. **21**: 48, 1923.

[2] *Black, J. H.: J. Lab. & Clin. Med.* **10**: *378 (Feb.) 1925.*

Based on these results, the conclusion has seemed justifiable that the active substance of pollen is not protein; that standardization by nitrogen content and by complement fixation does not determine the content of the active substance, and that treatment with protein-free extracts should be effective and, at the same time, free of the possible objectionable features of injection of extraneous protein.

In an effort to determine the truth of this conclusion, treatment has been carried on during the past summer with sixty-two ragweed-sensitive persons. Some of these had been treated successfully in the preceding year; some had received no benefit from treatment the preceding year, while the others had had no previous treatment. The treatment was all preseasonal, beginning from six weeks to two months prior to the time the ragweed season was expected to begin. All treatment was discontinued at the onset of the season. Injections were given three times weekly; the increase in dosage was determined by the presence or absence of local and constitutional reactions, and the number of doses used varied, depending on the rapidity with which the dosage could be increased. This technic was identical with that used the preceding year.

The preparation used in treatment was an extract of giant ragweed pollen. The concentration was 2 per cent in a solution composed of two parts of glycerol, and Coca's solution, one part. This extract was made in June, 1924, and was used in the treatment of all ragweed cases of that year. It was stored in the icebox. At the time of its use this year, the preparation was a year old. Its activity, as determined by intranasal instillation, was exactly the same as when tested immediately after its preparation a year before.

In May of this year, the extract was tested to determine whether, after the lapse of eleven months, a reaction for protein could be elicited. The following color reaction tests for proteins were made: biuret, Adamkiewicz, Liebermann, xanthoproteic, and the reduced sulphur reaction. Then picric acid, sodium tungstate and sodium bicarbonate were used as precipitants of protein. All of these were negative, no evidence whatever of protein being found.

This extract, a year old and containing no protein—so far as may be determined by the ordinary qualitative tests—but as active as formerly when instilled intranasally, was used in the treatment of sixty-two ragweed-sensitive persons. Reports have been received at the end of the season which indicate that thirty-eight (61.3 per cent) had perfect freedom from all symptoms; fourteen (22.6 per cent) had occasional mild symptoms but were to all intents and purposes relieved, and ten (16.1 per cent) were little benefited. Eighty-three and nine tenths per cent, then, were practically free from symptoms—a result certainly as good as any we have previously been able to obtain.

The claim is not made that these results were obtained because the extract was protein-free, but it is believed that they substantiate the conviction that protein-free extracts are as potent as those with high protein content and that the amount of protein has nothing to do with the production of tolerance to the active substance of pollen.

CONCLUSION

The results of treatment of ragweed-sensitive persons with a ragweed extract containing no protein justify the statement that the active substance in pollen is not protein in character.

Medical Arts Building.

BACTERIA IN MUSCULAR TISSUES AND BLOOD OF APPARENTLY NORMAL ANIMALS

A PRELIMINARY REPORT *

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A number of investigations to determine whether or not bacteria are normally present in the tissues of apparently healthy animals were reported before 1912, principally by German workers, but very few reports on this type of work are recorded in the literature of more recent years. Many early workers [1] thought that the tissues of healthy animals are sterile. Messner,[2] in 1910, found no bacteria in 145 samples of flesh of normal slaughter animals. Zwick and Weichel,[3] in 1911, examined seventy-seven samples of muscle, liver, spleen and kidney of cattle and hogs. Of eight liver samples, six were positive, and only one muscle sample among fifty-nine tested contained bacteria. All other samples were sterile. In 1912, Grunt [4] found only 2 per cent. of 540 muscle samples to contain bacteria.

Table 1.—*Bacteria in Hams of Slaughtered Hogs*

Samples Taken	No of Hams Examined	No of Samples	Growths Number	Growths Per Cent.	Anaerobic Growths Number	Anaerobic Growths Per Cent.
Before scalding......	8	39	36	92	20	51
After scalding, before dehairing	8	39	31	79	20	51
Immediately after dehairing	8	41	28	68	22	54
Immediately after evisceration	11	52	43	83	38	73
After 48 hour chill...	4	20	16	80	14	70
During cure	3	15	13	87	9	60
Total	42	216	167	77	123	57

Other workers have obtained contrary results. Thus Boni,[5] in 1901, examined the lungs of twenty hogs for aerobes and found fourteen positive (70 per cent.); among ten lungs of guinea-pigs, two were positive (20 per cent.). Saski,[6] in 1908, examined eight organs from guinea-pigs and mice and isolated thirty-nine strains of bacteria from them, of which twenty-one were facultative anaerobes, ten strict anaerobes and eight strict aerobes. Conradi,[7] in 1908, examined 162 samples of muscle, liver, kidney, lung, lymph node and spleen from 150 slaughtered cattle and hogs, and found that seventy-two samples were not sterile (40 per cent.). Thirty of these gave anaerobic growth. Wolbach and Saiki,[8] in 1909, recorded the finding of a new anaerobic spore-bearing bacillus in twenty-one of twenty-three livers of healthy dogs. In 1910, Amako [9] found aerobes present in forty-eight samples of eighty-eight (55 per cent.) taken from the muscle, spleen, kidney and liver of cattle, and Bierotte and Machida [10] got a similar percentage of positives (59 per cent. with 11 per cent. anaerobes) from fifty-four samples of the same organs of cattle, sheep and hogs. Bugge and Kiessig,[11] in 1911, examined 241 muscle samples from sixty-six head of freshly slaughtered cattle and found aerobes in thirty-six samples (15 per cent.), and in repeated tests, recorded in 1919,[12] they obtained sixty-four growths from 283 samples (23 per cent.).

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* From the Department of Hygiene and Bacteriology, University of Chicago

[1] Von Fodor: Arch f. Hyg. **4**: 1, 1884 Hauser, G: Arch f. exper Path. u Pharmakol **20**: 162, 1886. Neisser, M: Ztschr. f. Hyg. u. Infektionskrankh. **22**: 12, 1896. Opitz, E Ibid **29**: 505, 1898. Selter, H.: Ibid **54**: 363, 1906.

[2] Messner: Tierärztl. Zentralbl. **28**: 31, 1910

[3] Zwick and Weichel: Arb a. d. k. Gsndhtsamte. **38**: 327, 1911.

[4] Grunt, O: Ztschr. f. Fleisch- u Milchhyg. **23**: 193, 1912.

[5] Boni: Deutsch Arch f. klin. Med **69**: 542, 1901.

[6] Saski, S.: Bull internat. de l'Acad d. sc. de Cracovie, Classe des scien. math et natur. **4**: 255, 1907 (in Russian); abstr., Centralbl. f. Bakteriol, 1, Ref **42**: 587, 1908 1909.

[7] Conradi: Ztschr. f Fleisch- u Milchhyg. **19**: 341, 1909.

[8] Wolbach, S. B., and Saiki, T.: J. M. Res. **21**: 267, 1909.

[9] Amako, T.: Ztschr f. Hyg. u Infectionskrankh. **66**: 166, 1910

[10]: Bierotte, E., and Machida, S: München. med Wchnschr. **57**: 636, 1910.

We have found no record of similar work on apparently healthy live animals.

The work reported here in a preliminary manner has been carried out in connection with a bacteriologic study of meat spoilage under a fellowship established by Dr. Arthur Lowenstein and in cooperation with the Institute of American Meat Packers. Examinations have been made of samples taken from the muscles of hams at various stages during slaughter, and also from muscles and blood of live hogs, rabbits and guinea-pigs. All hams of the slaughtered hogs were taken directly to the laboratory. The samples were taken from them within one hour after killing. The hams were sectioned at from about 1 to 2 inches below the symphysis pubis, and the whole cut surface of the upper portion was seared with the direct flame of a Bunsen burner. Suitable sample areas were chosen, the seared crust was removed with sterile instruments from these areas and the new fresh surfaces seared in the same manner. Approximately 3 gm. samples of muscle were then excised aseptically from these twice seared areas and were distributed as follows:

1. One gram samples inoculated into beef heart medium.
2. The remainder ground aseptically with 5 c.c. of 0.5 per cent. salt solution and distributed:
    (a) A few drops to a blood agar slant.
    (b) Five-tenths cubic centimeter to dextrose agar shakes.
    (c) The remainder heated at 80 C. for ten minutes, then cultures taken in:
        1. Plain agar slant.
        2. Dextrose agar shakes.

In live animals, the muscle samples were obtained aseptically from the gracilis muscle. Cultures of 1 gm. samples were taken in beef heart medium, and three others in 50 c.c. quantities of broth. The blood was drawn directly from the heart and was distributed in 1 c.c. quantities to 9, 49, 99 and 299 c.c. quantities of sterile broth containing from 3 to 15 gm. of ground beef heart in each portion of broth. The cultures were incubated at 37 C., and presence or absence of growth was recorded after two, four, seven and fourteen days. The results are summarized in the accompanying tables.

TABLE 2.—*Bacteria in Muscular Tissues of Healthy Live Animals*

Animal	Number	No. of Samples	Growths Number	Growths Per Cent.	Anaerobic Growths Number	Anaerobic Growths Per Cent.
Hog	6	36	36	100	20	56
Rabbit	6	36	22	61	13	36
Guinea-pig	6	36	32	89	20	55
Total	18	108	90	83	53	49

Identification of the micro-organisms found is now in progress. Details of the technic and a discussion of the findings will be published later.

CONCLUSIONS

1. Cultures of the muscular tissues of slaughtered hogs show the presence of bacteria in 77 per cent. of 216 samples examined; 57 per cent. of the samples show the presence of anaerobes.

2. Cultures of the muscular tissues of healthy live hogs, rabbits and guinea-pigs show the presence of bacteria in 83 per cent. of 108 samples examined; 49 per cent. of the samples show the presence of anaerobes.

TABLE 3.—*Bacteria in Blood of Healthy Live Animals*

Animal	Number	No. of Samples	Growths Number	Growths Per Cent.	Anaerobic Growths Number	Anaerobic Growths Per Cent.
Hog	6	6	6	100	6	100
Rabbit	6	6	4	67	1	17
Guinea-pig	6	6	2	33	1	17
Total	18	18	12	67	8	44

3. Cultures of the blood of healthy live hogs, rabbits and guinea-pigs show the presence of bacteria in 67 per cent. of eighteen samples examined; 44 per cent. of the samples show the presence of anaerobes.

4. It appears justifiable to conclude from our data that bacteria may be isolated with considerable regularity from the blood and muscular tissues of healthy live hogs, rabbits and guinea-pigs as well as from the tissues of slaughtered hogs.

SYMPTOMS ASSOCIATED WITH DUODENAL RETENTION AND REVERSE MOTILITY *

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In a previous communication,[1] it was pointed out that a mass of barium injected into the duodenum was partially divided and passed in opposite directions along that viscus. Similar movements were shown to occur in conditions that permitted the accumulation of barium at any point along the course of the duodenum following the taking of a barium meal. From these observations it was concluded that distention of the duodenum was sufficient stimulus to excite contractions of the musculature about the mass and the subsequent passage of contraction waves in opposite directions along the longitudinal axis of the duodenum. Roentgenographic examinations of the gastro-intestinal tract on a series of 398 consecutive patients over a period of three years corroborate the findings and conclusions previously derived.

Early in the study of duodenal motility, it became apparent that definite symptoms were either directly associated with or immediately followed reverse movements of barium. Identical symptoms were observed as the result of either direct duodenal injections or retention in the duodenum during the period of gastric clearance following the ingestion of a barium meal.

The observations and conclusions here presented are derived from a study of seventy-seven consecutive patients who came to surgery for correction of pathologic processes in the abdomen. Roentgenographic results are based entirely on fluoroscopic examinations: Plates gave meager information relative to motility, and served only to record definite anatomic abnormalities. Tracings taken from grease pencil drawings made on the fluoroscopic screen constituted a part of the permanent records. Such drawings must be made rapidly and, consequently, are anatomically incorrect; however, they have the advantage of representing a series of events of which the observer is aware. Observations were made with the patient in the upright position.

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[11] Bugge and Kiessig: Ztschr. f. Fleisch- u. Milchhyg. **22**: 69, 1911.
[12] Bugge and Kiessig: Ztschr. f. Fleisch- u. Milchhyg. **30**: 17, 34, 53, 1919.

* Read before the Medical Staff of the Columbus Hospital, Nov. 12, 1925.

[1] Wheelon, Homer: Duodenal Motility: Radiographic Observations Following the Direct Injection of Barium into the Human Duodenum, J. A. M. A. **80**: 615 (March 3) 1923.

The present study is concerned only with retention and reverse motility of the duodenum as observed during the active phase of gastric clearance; hence, no mention will be made of that type of regurgitation of duodenal contents into the stomach which normally occurs during digestive phases. A momentary lag of barium in its passage through the pars descendens of the duodenum, an occurrence usually described as normal, was repeatedly seen in examinations that were otherwise negative. Such occurrences were not associated with subjective symptoms and have not been included in the present series of observations. Retention in the duodenum was considered positive when barium remained for a period longer than that occupied by the complete passage of two gastric peristaltic waves.

Duodenal retention and reverse motility occurred in seventy-four (96.3 per cent) of the seventy-seven patients who came to operation.

SYMPTOMS

Symptoms associated with duodenal retention and reverse motility are of two types, subjective and objective. Subjective symptoms are divided into two groups according to the phraseology used by the patients to express their experiences: first, those of a static nature associated with duodenal retention, and second, those descriptive of motion (kinetic) associated with retention and reverse motility.

Subjective.—A sense of localized fulness or weight (static) was mentioned by twenty-three (29.8 per cent) of the total number of patients. Symptoms associated with duodenal motility (reverse movements of barium) described as pain, nausea, uneasiness, faintness, dragging and swaying sensations (Table 1) were complained of by sixty-four (83.1 per cent) of the total number of patients. Of the sixty-four patients who mentioned subjective symptoms, twenty-three experienced sensations of both types.

Forty-eight (75 per cent) of the sixty-four patients experiencing discomfort during reverse movements of barium expressed their feelings as those of nausea. Subjective symptoms described as pain were mentioned by thirty-seven patients; uneasiness, by fifteen; dragging sensations by thirteen, and faintness by eleven. It is of interest to note that four patients described their distress as a feeling of motion—swaying sensations—a condition that actually was going on in the duodenum.

Definite duodenal involvement was observed in fifty-two (81.2 per cent) of the sixty-four patients mentioning subjective symptoms. In twelve (18.7 per cent) of the patients who complained of subjective symptoms, the duodenum was not pathologically involved. In these twelve patients, duodenal retention and reverse motility were as pronounced as in the fifty-two who had demonstrable duodenal involvement.

No mention was made of subjective symptoms by ten patients who showed marked duodenal retention and reverse motility. It is possible that these ten persons experienced distress of varying degree; however, no voluntary expression was made and at no time were they solicited as to their feelings.

Objective.—Objective symptoms referable to the gastro-intestinal tract (belching, mouth movements, regurgitation and vomiting) associated with duodenal retention and reverse motility occurred in forty-nine (63.6 per cent) of the total number of patients. Belching occurred immediately fellowing the passage of barium toward the stomach in forty-one (53.2 per cent) of the subjects. So marked and common was this occurrence that the assistants would predict the act of belching on observing barium passing toward the stomach. Fourteen patients regurgitated varying amounts of duodenal material into the stomach. In eight patients, vomiting followed the appearance of a rapid to and fro movement of barium in the duodenum. Such movements were invariably associated with nausea. This type of movement was so characteristic that we termed the condition, for the sake of brevity, "duodenal delirium." Mouth movements, such as clamping of the jaws and swallowing movements, were observed in fourteen patients.

TABLE 1.—*Occurrence of Symptoms Associated with Duodenal Retention and Reverse Motility in Seventy-Seven Consecutive Operations for Correction of Gastro-Intestinal Disturbance*

	No.	Per Cent	No.	Per Cent of Total
1. Duodenal retention and reverse motility...			74	96.3
A. Associated with duodenal involvement	58	78.3		
B. No duodenal involvement..........	16	21.6		
2. Symptoms:				
A. Subjective			64	83.1
1. Static (distention)			23	29.8
a. Fulness	18	78.3		
b. Weight (localized)	8	34.8		
c. Duodenal pathologic changes	21	91.3		
2. Kinetic (motility)			64	83.1
a. Nausea	48	75 0		
b. Pain	37	57.8		
c. Uneasiness	15	23.4		
d. Dragging	13	20.3		
e. Faintness	11	17.1		
f. Swaying	4	6.2		
g. Explosive	2	3.1		
h. Heat	2	3.1		
i. Gurgling	1	1.5		
j. Pathologic change:				
(a) Positive	52	81.2		
(b) Negative	12	18.7		
(c) Retention	64	100.0		
B. Objective:				
1. Gastro-intestinal			49	63.6
a. Belching	41	83.6		
b. Mouth movements	19	38.7		
c. Regurgitation into stomach.	14	28.5		
d. Vomiting	8	16.3		
2. Vasomotor (pallor, 16; bradycardia, 2; collapse, 1)........			17	22.1
3. Neuromuscular (tetany)			1	1.3

Vasomotor symptoms were observed associated with high states of duodenal retention and reverse motility in seventeen (22.1 per cent) of the total number of patients. Pallor occurred in sixteen subjects; marked bradycardia in two, and complete collapse in one. These findings, undoubtedly, are highly inaccurate for the reason that definite observations are difficult to make on more than one organ at a time and that in a dark room. However, mention of faintness by the patient in whom duodenal motility is disturbed has taught the benefits of immediate illumination and a prone position for the patient; incidentally, it has permitted the observations mentioned above.

One patient experienced a classic attack of tetany following a series of powerful reverse movements of barium in the duodenum which culminated in vomiting and the typical tetanic convulsions.

Many of the patients complaining of subjective symptoms obtained relief following the act of belching, swallowing movements, duodenal regurgitation into the stomach, vomiting, forced respiratory movements, and the sipping of water. In several instances, persistent belching was quieted by the drinking of water.

Many pathologic processes might be considered as causative factors in the production of duodenal retention and reverse motility and consequently for many of the patients' complaints. The foregoing consideration, however, is concerned only with those symptoms which were observed directly associated with duodenal retention and reverse motility.

PATHOLOGY

This paper is not primarily concerned with the correlation of intra-abdominal disease to retention and reverse motility of the duodenum; however, it is of interest to note, in a general way, the associated pathologic change (organic) encountered at operation. The duodenum was directly involved in fifty-eight (75.3 per cent) of the seventy-four patients showing abnormal duodenal function; the biliary structures in fifty-four; the colon, including the appendix, in forty-two; the jejunum and ileum in seventeen; the female generative organs in thirteen, and the stomach in six. That is, fifty-eight (75.3 per cent) of the series of seventy-seven patients had pathologic changes in the duodenum, while only nineteen (24.7 per cent) had lesions in other structures (Table 2).

COMMENT

According to Alvarez,[2] "Actual reverse transport of material has been observed in those parts of the tract which are accessible to roentgenographic study. More important than visible reverse waves are the reverse impulses that hold back the barium here and there in the tract, in spite of the fact that the muscle is active, and the tube ahead unobstructed." Alvarez further suggested that the underlying etiology of vomiting, regurgitation, pyrosis, belching, nausea, globus, fulness after meals and biliousness "is a reversal of the currents in the tract." In 1925, he [3] obtained graphic waves of reverse peristalsis and was able to show that "vomiting or regurgitation of gastric contents is almost always preceded by an increase in the tone and activity of the small intestine."

In 1921, from observations on a patient who had complete occlusion of the small bowel at the duodenojejunal flexure, I [4] concluded that vomiting is associated with active motility of the duodenum and that periods of nausea preceding the act of vomiting might be looked on as the result of changes in the duodenum preparatory to that act. Later, I [1] observed that the injection of barium into the duodenum of one patient was followed by marked rhythmic to and fro movements, and that on three occasions subsequent to such movements the examination had to be discontinued because of faintness and dizziness of the patient.

Ivy and Vloedman,[5] while studying the small intestine during hunger, observed that "shortly after hunger motility nausea occurred and the balloons were vomited." They further state that they have "observed by use of the fluoroscope and by a change in the tracings that the balloon in the duodenum may be regurgitated into the stomach during a brief attack of nausea without the occurrence of actual vomiting." These authors also observed that distention of a balloon in the duodenum with 50 cc. of air was followed by nausea and a sensation of chilliness. Similar observations were made by Ivy and McIlvain [6] following the introduction of acid or sodium bicarbonate into the duodenum. "When applications were first made to the intestinal loop, defecation and vomiting, sometimes both, sometimes either one or the other, was observed. When the loops were overdistended, vomiting would frequently occur."

Keeton [7] observed that the tip of a Rehfuss tube was returned from the duodenum to the stomach during waves of nausea. He observed further that nausea followed the injection of various solutions directly into the duodenum. Twenty-six of the series of sixty patients studied by him complained of nausea as the result of duodenal stimulation; five complained of dizziness; nine had symptoms referable to the head, and six complained of distress about the neck. Keeton concluded from his study that nausea results from a motor dysfunction of the duodenum, most probably from pathologic antiperistalsis.

Friedman, Strauss and Arens [8] consider, as one of the indirect roentgenographic findings of gallbladder disease, "duodenal stasis manifesting itself by regurgitation to and fro of the barium meal as it passes down the duodenum, not emptying into the jejunum as in the normal, frequently regurgitating back into the bulbus."

According to Jordan,[9] "the distended duodenum of stasis shows vigorous peristalsis, but its contents, instead of passing freely through the four parts of the duodenum into the jejunum (which is the normal process), proceed only to the third or fourth part of the duodenum, and are seen to return again and again to the second part as each contraction wave passes. From time to time a very powerful duodenal wave succeeds in propelling a small amount of material through the kinked duodenojejunal junction. Sometimes the duodenum may be seen to 'writhe' energetically in futile effort to expel its contents into the jejunum. . . . Writhing of the duodenum may be very severe without producing symptoms. Sometimes, however, duodenal writhing is accompanied by epigastric pain which may resemble colic, or be described as a 'gnawing.'" In one case, Jordan observed the duodenum "to writhe vigorously for nine hours, and the patient was in great pain the whole time."

Marked degrees of reverse motility in the duodenum have been observed in patients who were shown at operation not to have organic change of the duodenum. In fact, I have repeatedly observed that patients showing marked duodenal retention and reverse motility had either a normal or shortened period of gastric clearance. Such observations, in the light of statements by Alvarez, necessitate the assumption that "reverse impulses that hold back the barium" are responsible for the accumulation of barium in the duodenum. Consequently, one

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2. Alvarez, W. C.: The Syndrome of Mild Reverse Peristalsis, J. A. M. A. **69**: 2018 (Dec. 15) 1917.

3. Alvarez, W. C.: Reverse Peristalsis in the Bowel, a Precursor of Vomiting, J. A. M. A. **85**: 1051 (Oct. 3) 1925.

4. Wheelon, Homer: Observations on Gastric and Duodenal Motility in Duodenal Obstruction, J. A. M. A. **77**: 1404 (Oct. 29) 1921.

5. Ivy, A. C.; Vloedman, D. A., and Keane, J.: The Small Intestine in Hunger, Am. J. Physiol. **72**: 99 (March) 1925.

6. Ivy, A. C., and McIlvain, G. B.: The Excitation of Gastric Secretion by Application of Substances to the Duodenal and Jejunal Mucosa, Am. J. Physiol. **67**: 124 (Dec.) 1923.

7. Keeton, R. W.: Nausea and Related Sensations Elicited by Duodenal Stimulation, Arch. Int. Med. **35**: 687 (June) 1925.

8. Friedman, J. C.; Strauss, A. A., and Arens, R. A.: A Clinical Radiological Study of the Gallbladder, Radiology **5**: 93 (Aug.) 1925.

9. Jordan, A. C.: Chronic Intestinal Stasis, London, Oxford University Press, 1923.

might regard actual reverse transport of barium as the result of an accentuation of the reverse impulses, or consider that waves of reverse motility sufficient actually to carry barium were excited because of distention of the duodenum. A definite answer to such postulates cannot be derived from the present study; however, distention of the duodenum, as shown by the works of others and the present findings, appears to be sufficient to excite reverse motility. Further, distention of the duodenum excites not only reverse movements of barium but also forward conduction; that is, barium may be passed from a given point in opposite directions along the duodenum at the same time.

The results of the present investigation are in complete accord with the statements of Friedman, Strauss and Arens relative to the indirect roentgenographic findings of gallbladder disease. In the present series, fifty-four patients showed a surgical condition of the biliary structures. Of this number forty-eight had hepatoduodenal adhesions; thirty-three, cholecystitis, four with stones; fourteen hepatitis of varying degrees, and one, cancer. In each of the fifty-four patients there was observed at the time of examination such indirect findings as mentioned by Friedman and his associates.

The surgical axiom, Fair, fat and forty female belching gas—gallbladder—operate, finds a rationale for belching, in that thirty-three patients were observed to have this symptom associated with duodenal retention, reverse motility and chronic cholecystitis. Belching associated with reverse motility in the duodenum was observed in a total of forty-one patients, in all of whom the hepatic structures were involved. Indeed, it appears as though the desire to belch is excited by disturbed duodenal motility and that belching with relief is completion of such reverse movements. Because of the relief afforded from epigastric distress by belching, patients often, consciously or unconsciously, swallow air in order to hear themselves relieved of their distress. Further, it appears that nausea, belching and regurgitation are but variations in the degree of factors responsible for the complete fruition of reverse duodenal motility; namely, vomiting.

The present data show that duodenal retention and reverse motility in sick patients are associated with definite duodenal involvement in 75.3 per cent of a series of seventy-four patients showing duodenal dysfunction. Such findings might lead to the hasty conclusion that disturbed duodenal motor function is the direct result of duodenal pathologic changes. However, sixteen patients showing retention and reverse motility were free from demonstrable disease in the duodenum. It therefore follows that retention and reverse motility are not dependent on organic pathologic changes of the duodenum. On the other hand, it does appear that retention in the duodenum from any cause—"reverse impulses that hold back the barium"—but which do not delay the normal emptying time of the stomach, or obstruction from pathologic causes, is sufficient to excite an attempt on the part of the duodenum to free itself of contents. These attempts of clearance which are so frequently associated with subjective symptoms result in the propulsion of materials toward the stomach, regurgitation of duodenal contents into the stomach, belching with relief, and vomiting.

In brief, the observations of Alvarez, Keeton, Ivy and his associates, Jordan, and Wheelon permit of two general conclusions: First, distention of the duodenum and reverse motility are sufficient stimuli to excite subjective symptoms; second, duodenal irritation—distention or retention—results in the appearance of waves which, at times, are associated with marked subjective symptoms and which pass toward the stomach, causing regurgitation or vomiting. The results of the present findings are in agreement with such conclusions.[10]

A definite understanding of the physiology and clinical significance of reverse motility in the duodenum awaits further investigation. That reverse movements in the duodenum serve a definite purpose in the processes of digestion has been amply shown by Spencer, Meyer, Rehfuss and Hawk.[11] The results of too rapid jejunal feeding are of common knowledge. The observations presented in this paper definitely show that reversal of the motility in the duodenum is by no means an uncommon clinical finding. At present we can only state that reverse motility in the duodenum is a normal physiologic occurrence and that symptoms arising from or associated with such processes may be looked on as the result of disturbances of motor functions.

TABLE 2.—*Occurrence of Pathologic Processes in Seventy-Seven Consecutive Operations for Correction of Intra-Abdominal Involvement*

Structures Involved:		No.	Per Cent
1. Duodenum		58	75.3
a. Adhesions and congenital bands	56		
b. Ulcer	11		
c. Obstruction at duodenojejunal flexure	8		
d. Diverticulum	1		
2. Biliary structures		54	70.1
a. Adhesions to duodenum	48		
b. Cholecystitis	33		
c. Hepatitis	14		
3. Colon, including appendix		42	54.5
a. Appendicitis	36		
b. Adhesions	8		
c. Membranes	4		
d. Cancer	1		
4. Jejunum and ileum		17	22.1
5. Female generative organs		13	16.8
6. Stomach		6	8.0
a. Cancer	4		
b. Ulcer	2		
7. Pancreas		1	1.3
8. Spleen		1	1.3

SUMMARY AND CONCLUSIONS

1. Duodenal retention and reverse motility—passage of barium toward the pylorus—were observed roentgenographically in seventy-four of a series of seventy-seven patients who came to surgery for the correction of pathologic changes within the abdomen.

2. Subjective symptoms were complained of by sixty-four (83.1 per cent) of the patients during periods of disturbed duodenal motility.

3. Objective symptoms referable to the gastro-intestinal tract occurred in forty-nine (63.6 per cent) of the patients. Belching, which occurred in forty-one patients, mouth movements, duodenal regurgitation and acts of swallowing, were preceded by or associated with reverse movements of barium in the duodenum. Vasomotor and neuromuscular disturbances were also observed, associated with reverse motility in the duodenum.

4. Duodenal involvement was found at operation in fifty-eight (75.3 per cent) of the seventy-four patients

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[10] Since completion of this paper, W. F. Henderson (J. A. M. A. 85:1462 [Nov. 7] 1925) reports that he has observed antiperistalsis in the duodenum in a series of 102 patients with positive stool reports for hookworm ova in ninety-five cases. Henderson is of the opinion that "hookworm infection must be excluded by careful laboratory work before duodenal antiperistalsis can be attributed with safety to other pathologic conditions."

[11] Spencer, W. H.; Meyer, G. P.; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. 39:459 (Feb.) 1916. Rehfuss, M. E.; Bergeim, Olaf; and Hawk, P. B.: Gastro-Intestinal Studies, I, The Question of the Residuum Found in the Empty Stomach, J. A. M. A. 63:11 (July 4) 1914.

who showed duodenal retention and reverse motility. In sixteen patients showing duodenal retention and reverse motility, the duodenum was free from demonstrable pathologic changes.

5. These findings suggest that distention of the duodenum is sufficient stimulus to elicit subjective symptoms and that duodenal distention or retention results in or is followed by the appearance of forces—waves—which pass material toward the stomach and which are often associated with or produce nausea, pain, uneasiness, regurgitation of duodenal contents into the stomach, vasomotor and neuromuscular disturbances, belching and vomiting.

Fifth Floor, American Bank Building.

PNEUMONIA SIMULATING SINUS THROMBOSIS

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Reminiscent of the somewhat obsolete caution in the diagnosis of surgical appendicitis and its differentiation from a type of lobar pneumonia are the analogous situations arising as a personal experience with disconcerting frequency during the grip epidemic in Chicago, in the spring of 1925. I am well aware that this experience is only that of well marked clinical coincidence, and that in recording these notes nothing unusual in the component parts of the cases cited will be noted. The fact, however, that in each of the instances to be reported the patient was referred to me by men of broad medical experience as serious otologic cases requiring immediate and radical surgery prompts me to publish these abbreviated case histories as a contribution to the differential diagnosis of thrombosis of the lateral sinus, and as the possible prevention of serious error in the choice of procedure when this particular clinical picture is encountered.

During the course of an acute suppurative otitis media, the occurrence of sudden marked febrile excursions cannot fail to cause apprehension in the minds of the general physician and the otologist. When these excursions reach hyperpyrexial elevation within a period of a few hours with equally rapid declines, and recur with almost clocklike regularity, the seriousness of the situation is readily apparent. If, in addition to the foregoing symptom, chills or marked chilly sensations accompany the febrile excursions, followed by profuse sweats and the ominous feeling of well being in the interval which the otologist has learned to dread, one would surmise that the moment for surgical intervention is close at hand. Certainly, with the cardinal symptoms of phlebitis and thrombosis present in the course of an acute aural discharge, exploration of the mastoid cavity and the lateral sinus area presumably cannot be long delayed.

The three following cases and the accompanying fever charts illustrate briefly the precarious situation which may confront the otologist or the general practitioner under ordinary circumstances at a time when prompt radical action may be essential to the life of the patient or the final contributing cause of his demise.

In each of the three instances reported the following similarities may be noted:

1. Initial diagnosis: acute suppurative otitis media (bilateral in Case 1; complication of measles in Case 2).
2. Tenderness over the mastoid process of the involved ears.
3. Hyperpyrexia of the septic type, with speedy elevations to 105 and 106 F., with equally speedy recessions.
4. At least one chill preceding the elevations of temperature in each case, and profuse sweats as the temperature lowered.
5. Rhythmic febrile elevations occurring once each day at approximately the same hour in the individual case.
6. Negative pulmonary findings by percussion and auscultation in the hands of capable and experienced pediatricians.
7. Hospital admission diagnosis of lateral sinus thrombosis, complicating acute otitis media and acute mastoiditis.
8. Hospital discharge diagnosis of central pneumonia, lobar type; acute suppurative otitis media.

REPORT OF CASES

Case 1.—*History.* M. A., a boy, aged 2½ years, was admitted to the hospital fourteen days after the paracentesis of both drums for acute suppurative otitis media. The child had been acutely ill, with high temperature, pain and vomiting previous to the release of pus, and although there was a profuse and continuous discharge almost immediately, no remission of any of the principal symptoms occurred in the two weeks prior to the hospital admission. The temperature had ranged between 102 and 105.

Examination.—The patient presented a marked septic appearance. The heart, lungs and urine were normal. The white blood cells numbered 18,500; and there were 82 per cent. polymorphonuclears.

Otologic examination revealed a moderate tenderness, on deep pressure, over both mastoids. There was no redness or edema, and no displacement of either auricle. There was a profuse discharge in the canal and the auricle of the right ear, which filled quickly under the eye from a vertical opening in the posterior half of the drum. The membrane was red, edematous, bulging and pulsating. The left ear presented a very similar picture in this canal, with a definite depression of the posterior superior wall.

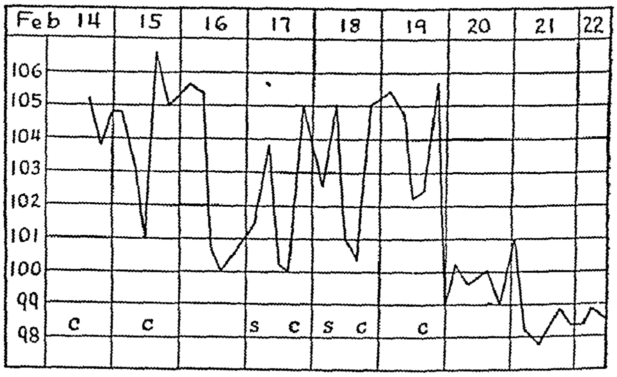

Chart 1.—Temperature range in Case 1: *C*, chill; *S*, slight chill.

Treatment and Course.—A simple mastoid operation was performed on both ears. There was considerable softening and bone destruction, all of which was readily removable by a curet. There was no exposure of the dura or the lateral sinus on either side. After two excursions of marked proportion, the temperature gradually came down to normal on the seventh day, and the patient was shortly discharged from the hospital, with instructions to report for dressings. The discharge was still present in both ears and both mastoid wounds.

Subsequent History.—The child was readmitted to the hospital one week after discharge. He had continued to improve the first four days of his return home, having normal temperature and a gradually decreasing discharge from both canals and wounds. On the fifth day, he suddenly developed a chill and temperature of 105, which returned to normal in a few hours. He was quite comfortable following this episode, with fair appetite and his usual playfulness, and remained so until the next day when a similar chill and temperature occurred. On the succeeding morning, he was brought to the hospital one hour after the third chill and was admitted with a temperature of 105.2. During the period at home a slight dry throaty cough developed, which was noted by the parents for two or three days.

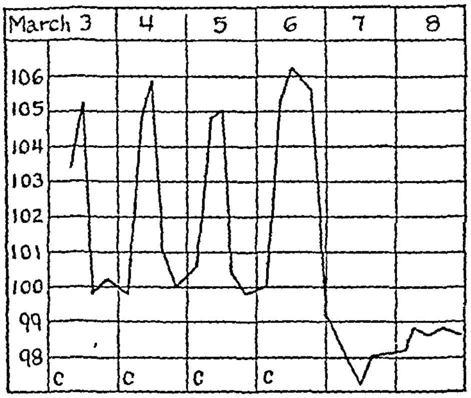

Chart 2.—Temperature range in Case 2.

On admission, a marked increase in the discharge from both ears, particularly the left, was noticed, and the patient frequently called attention to pain in the left ear. The hyperpyrexia was followed by profuse sweats and marked pallor, lasting several hours, after which the patient brightened perceptibly, soon becoming playful and exhibiting hearty appetite. The temperature range is shown in Chart 1.

The white cell count was 32,800, with 86 per cent. polymorphonuclears.

All physical findings were normal. The heart and lungs were normal by auscultation and percussion. The pediatric diagnosis was sinus thrombosis, right or left lateral sinus. Spinal puncture for the Ayer-Tobey test showed increased pressure of spinal fluid, clear, 8 cells per cubic millimeter and a negative Pandy test. Patency of both lateral sinuses was demonstrated by jugular pressure. Roentgen-ray examination of the chest revealed a pathologic area in the lower left lung field, consisting of a cloudiness that appeared to be that of a lobar consolidation.

A roentgenogram made three days later revealed an area of cloudiness in the lower left lung field not quite filling out the bases and extending upward to the lower portion of the upper lobe. The appearance was that of pneumonia.

The lesion was demonstrable by percussion and auscultation twenty-four hours after the first films were taken.

Case 2.—Three weeks previous to hospital admission, D. S., a boy, aged 8, had had an attack of measles with no unusual symptoms. The temperature had gradually come to normal, and after twenty-four hours of seeming recovery the child complained of severe pain in the left ear. Coincident with this there was an elevation of temperature to 101. An otologist was called, who diagnosed early abscess and advised immediate paracentesis. This was done, with prompt relief to the child and a rapid return to normal temperature. Two days later, there was a febrile rise to 102, without pain, and though there was a slight serous discharge from the ear the aurist, who was again called, recommended a larger opening in the drum. This was done, but without effect on the temperature. On the following day there was a distinct chill, with a sudden febrile rise to 105.2 and with a rapid remission to 99. A similar hyperpyrexial excursion occurred twenty-three hours later, after which I was called in consultation.

Otologic examination revealed a normal right ear. The left canal contained a small amount of seropurulent discharge, and remained dry after sponging. There was a vertical wedge-shaped, linear opening in the posterior superior quadrant of the drum. There was very little edema of the membrane and no bulging, but a slight pulsation was apparent within the limits of the perforation. The patient complained of tenderness on deep pressure over the left mastoid process.

General physical examination by the pediatrician in charge, whose opinions are accepted with confidence, was reported as entirely negative.

The patient was removed to the hospital, and his subsequent temperature range was recorded, as in Chart 2.

Roentgenograms of the chest, taken on the second hospital day, revealed an area of cloudiness in the right lower lung field corresponding in two planes to the anatomic limits of the right lower lobe. The lesion was demonstrable by the stethoscope thirty-six hours after the films were taken.

The patient recovered, as shown on the chart. The diagnosis was central pneumonia, involving the right lower lobe.

Case 3.—The patient reported in Case 1 was brought back to the hospital three months after his previous discharge. He had been ill for five days. The onset, with severe earache on the left side, fever and marked malaise, was followed in five hours with sudden profuse discharge of thick mucopus. There was gradual but definite improvement in the thirty-six hours following rupture, with freedom from pain and practically normal temperature. During the evening of the second day, the child developed a sudden chilliness. Brought immediately to the hospital, he was admitted with a temperature of 105.4. Chart 3 shows the subsequent temperature course.

The symptoms, therefore, consisted of marked regular temperature elevations to 105 and over, with an acute and freely discharging ear three days after spontaneous rupture. Our previous experience with this patient probably prejudiced us against undue alarm when it was found that the physical findings, except for the acute otitis media, were entirely negative. The patient was observed for three days, during which time the ear condition from a local standpoint behaved in the usual manner. No findings by percussion and auscultation were elicited in repeated examinations of the chest.

On the fourth day the pediatrician was still unable to find any pathologic change in the lungs and reported finally that in his opinion the ear infection was the direct cause of the disturbance. A roentgenogram of the chest was taken, however, and revealed a clouded area in the upper right lung. The lower border of this area was sharply demarcated in accordance with the anatomic limits of the upper lobe. The diagnosis was central pneumonia, involving the upper right lobe. The lesion was not perceptible with the stethoscope until twenty-four hours before the patient had entirely recovered.

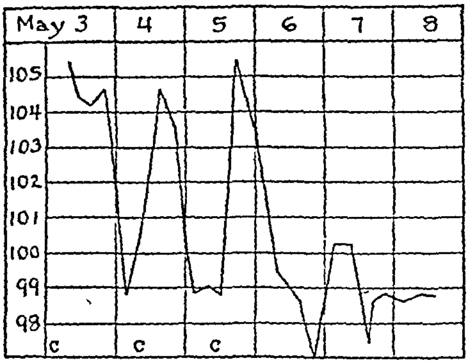

Chart 3.—Subsequent temperature range (Case 3).

104 South Michigan Avenue.

Tuberculosis of the Hip.—How poor must be the ultimate prospect for a joint when the articulating bones are fashioned by the ravages of tuberculous disease! After destructive tuberculosis, Nature does not always make the best of a bad job; it becomes our privilege to guide or force her hand; and in doing so we should remember that sound fixation is, for a weight-bearing joint, better in the long run than movement between bones ill fitting and imperfectly covered.—Girdlestone.

INTRACRANIAL HEMORRHAGE IN THE NEW-BORN *

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Two years ago at the meeting of this section, a preliminary report[1] of lumbar puncture tests on 100 consecutive new-born babies within from twelve to twenty-four hours after birth was presented. It was so surprising to find bloody and blood-tinged cerebrospinal fluid in many of these cases that similar tests to confirm or disprove the findings of the first series were performed on a second series of 100 new-born babies, and these observations have been continued until the total series consists of 500 new-born babies on whom a lumbar puncture was performed within from twelve to forty-eight hours after birth; bloody and blood-tinged cerebrospinal fluid was present in forty-five babies, that is, 9 per cent. This frequency of intracranial hemorrhage of varying degree in the new-born of this series suggests the importance of recognizing the clinical signs, if any, of its presence and of the early treatment of the acute condition for fear that a chronic condition of cerebral spastic paralysis and mental retardation may later develop, if the intracranial hemorrhage is not entirely absorbed.

Until recent years, the literature of intracranial hemorrhage in the new-born has been concerned with extreme cases, either as postmortem studies of extensive intracranial hemorrhage due to laceration of the large sinuses, tentorium, falx, etc., or as clinical observations of the signs of a probable large intracranial lesion or hemorrhage, and the description of methods to increase the coagulability of the blood and in this manner lessen the cerebral damage and its resulting chronic condition of cerebral spastic paralysis with mental retardation. Almost 100 years ago, Denis,[2] Billard[3] and Cruveilhier,[4] in the period from 1826 to 1835, published several papers intimating and suggesting the causal relationship of intracranial hemorrhage at birth and the later development of cerebral spastic paralysis. In 1843, Little[5] of London stated in his first monograph on the subject of "Deformities of the Human Frame" that a difficult labor might be an etiologic factor, but that lack of development of cerebral tissues and meningitic inflammatory processes were the usual causes. Only nineteen years later (1862), in his second monograph[6] on this subject, Little stated that, as a result of further study, especially of a large series of postmortem examinations, he was of the opinion that almost 75 per cent. of the cases of cerebral spastic paralysis were due to an intracranial hemorrhage at the time of birth. In 1885, Sarah McNutt confirmed this opinion by careful pathologic studies. More recently, Beneke[7] in 1910, Pott[8] in 1911, Mayer[9] in 1915, Holland[10] *in 1920, and within the last four years* Schafer,[11] Schwartz,[12] Saenger,[13] Capon,[14] Barnett[15] and others have contributed valuable postmortem observations, and yet the literature of the clinical observations has been most meager. In this country Green,[16] Brady,[17] Sidbury,[18] Warwick,[19] Rodda,[20] Strachauer,[21] Ehrenfest,[22] Conkey,[23] Huenekens,[24] and Munro and Eustis[25] have all added to the knowledge of the subject during the last decade. Within the last ten months, Schwartz[26] of Berlin has stated that "the pathology of the first month of life is completely dominated by the birth injuries of the brain"; Fischer[27] of Basel has written that his postmortem observations at the institute have convinced him that "the 10 per cent. of deaths during the first month are chiefly due to cerebral birth injuries"; and Huenekens,[28] in a recent article, says that "the recognition of cerebral hemorrhage of the new-born is a most neglected phase in their care and yet it is a most important one."

During the last ten years, as a result of examining fifty-nine acute cases of extensive intracranial hemorrhage in the new-born[29] (the accuracy of the diagnosis being confirmed by lumbar puncture, cranial operation and necropsy), and during the same period of time having studied a large group of chronic cases in children with varying degrees of spastic paralysis and mental retardation, and in whom, in selected cases, the diagnosis of a former intracranial hemorrhage, most probably occurring at the time of birth, was confirmed by operative and postmortem findings,[30] one of us (S) became so impressed with the possible frequency of acute intracranial hemorrhage in the new-born that a lumbar puncture within from twelve to twenty-four hours after birth was advised in a series of 100 consecutive new-born babies as an accurate method of diagnosis in many of these acute cases. It is true that babies having large intracranial hemorrhage frequently did disclose signs of its presence by varying degrees of stupor, respiratory difficulties, refusal to nurse and muscular twitchings even to convulsive seizures, and at necropsy the diagnosis was confirmed (it was considered fortunate that the baby did not survive). In the milder degrees of intracranial hemorrhage of an *amount that could be entirely absorbed* together with the cerebrospinal fluid by the natural means of absorption alone, the acute signs, if any, of *its presence were of such temporary duration,* of several days at most, that the child made a permanent excellent recovery, and the birth history was quickly forgotten, if indeed anything abnormal at the time of birth had been observed. However, in those cases in which the amount of intracranial hemorrhage was not of sufficient degree to cause death and yet of larger quantity than could be entirely absorbed by the natural means of absorption (through the walls of the supracortical veins chiefly [80 per cent.] sinuses, pacchionian bodies, etc.), the babies only apparently recovered from the acute condition within a period of from two to four weeks and were even considered normal until the seventh month and usually within the first year, when it was noticed that the child was not developing physically at the normal rate as to holding up its head and sitting up, and later was retarded in beginning to walk and to talk. Usually within the latter part of the first year, an increasing spasticity of either one or both legs appeared as part of a hemiplegic or a diplegic condition. It is in the latter chronic conditions of intracranial hemorrhage in the new-born that the etiologic factor of hemorrhage has been frequently overlooked owing to the paucity and even lack of the clinical signs at the time of the acute condition at birth—the cells of the cerebral cortex being only partially developed at the time of birth and thus even large cerebral lesions not being disclosed clinically. Then the later development of a chronic physical and mental impairment in a child apparently normal up to the latter part of the first year has been a most puzzling one, and the present observations have been made in the hope that the acute condition of intracranial hemorrhage in the new-born will be more frequently recognized, so that its appropriate treatment—possibly repeated lumbar punctures of spinal drainage together with the methods of increasing the blood coagulability—may be instituted early, while the blood is in fluid form and not after a period of days, when the hemorrhage that could not be absorbed has coagulated. Thus the permanent presence of a supracortical organization-residue—the future obstruction to free absorption of the cerebrospinal fluid and the underlying cause of the varying degrees of increased intracranial pressure of cerebral edema in these chronic cases of cerebral spastic paralysis, can be prevented.

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* Because of lack of space, this article is abbreviated here by the omission of illustrations. The complete article will appear in the Transactions of the Section and in the authors' reprints.

1. Sharpe, William: Intracranial Hemorrhage in New-Born, J. A. M. A. **81:** 620-624 (Aug. 25) 1923.
2. Denis, Commercy, 1826.
3. Billard, Paris, 1828.
4. Cruveilhier, Paris, 1829-1835.
5. Little, J. W.: Deformities of the Human Frame, London, 1843.
6. Little, J. W.: On the Influence of the Abnormal Parturition, Difficult Labors, etc., upon the Mental and Physical Condition of the Child, Obst. Tr. **3:** 243, 1862.
7. Beneke: München med. Wchnschr., 1910, p. 2125.
8. *Pott: Ztschr.* f. Geburtsh. u. *Gynäk.* **69**, 1911.
9. Mayer, A.: Zentralbl. f. Gynäk., 1915, No. 46.
10. Holland: [illegible] **10.**
11. Schafer: [illegible] ık. **84,** 1921.
12. Schwartz: " [illegible] 1922, No. 30.
13. *Saenger:* Monatschr. f. Geburtsh. u. Gynäk., 1924.
14. Capon, N. B.: J. Obst. & Gynec. Brit. Emp. Col. **29:** No. 4.
15. Barnett, E. J.: Northwest. Med. **21:** 243 (Aug.) 1922.
16. Green: Boston M. & S. J. **170:** 682, 1914.
17. Brady, J. M.: Meningeal Hemorrhage, J. A. M. A. **71:** 347 (Aug. 3) 1918.
18. Sidbury, J. B.: Arch. Pediat. **37:** 545 (Sept.) 1920.
19. Warwick, Margaret: Am. J. M. Sc. **158:** 95 (July) 1919.
20. Rodda, F. C.: Determining Coagulation Time of Blood in New-Born, *Am. J. Dis. Child.* **19:** *268 (April) 1920.*
21. Strachauer, A. C.: Minnesota Med. **3:** 577 (Dec.) 1920.
22. Ehrenfest, Hugo: Birth Injuries of the Child, New York, D. Appleton & Co., p. *39;* Causation of Intracranial Hemorrhages in New-Born, Am. J. Dis. Child. **26:** 503 (Dec.) 1923.
23. *Conkey, O. F.: Complications of Labor, Cause of Intracranial* Hemorrhage, Arch. Pediat. **40:** 239 (April) 1923.
24. Huenekens, E. J.: Care of New-Born in First Weeks of Life, J. A. M. A. **81:** *624 (Aug. 25) 1923.*
25. Munro, D., and Eustis, R. S.: Intracranial Hemorrhage in New-Born, *Am. J. Dis. Child.* **24:** *273 (Oct.) 1922.*
26. Schwartz, P.: Deutsch. med. Wchnschr. **50:** 1357 *(Oct. 3) 1924.*
27. Fischer, B.: Schweiz. med. Wchnschr. **54:** 905 *(Oct. 2) 1924.*
28. Huenekens, E. J., quoted by Warwick (Footnote 19).
29. Sharpe, William: Brain Injuries, J. A. M. A. **66:** 1536 (May 13) *1916.*
30. Sharpe, William: Proc. Am. A. for Feebleminded, 1918.

OBSERVATIONS AND LUMBAR PUNCTURE FINDINGS

First Series.[1]—In the first series of 100 consecutive new-born babies on whom a lumbar puncture was performed within from twelve to twenty-four hours after birth, the cerebrospinal fluid was bloody in four and blood tinged in five, that is, a total of 9 per cent., and under varying degrees of increased pressure (the normal pressure in the new-born, two weeks after birth, being approximately from 3 to 5 mm., as registered by the spinal mercurial manometer). As many as six lumbar punctures of spinal drainage were necessary in one case to obtain clear cerebrospinal fluid under normal pressure. Two of these babies died, and necropsy revealed a large ventricular hemorrhage in one and a mild subarachnoid hemorrhage with extensive cerebral edema in the other. Repeated lumbar punctures of spinal drainage at intervals of twenty-four hours were sufficient to make the cerebrospinal fluid clear and under normal pressure in the remaining seven cases. No instruments had been used in these nine cases; one was a version with breech extraction; in two, the cord was about the neck. Low forceps had been applied in ten cases of this series, but no intracranial hemorrhage had occurred in these particular instrumental deliveries. The cord-Wassermann reaction was negative in each case. Two cases were reported as "jaundiced." One baby, in whom convulsive twitchings developed ten hours after birth, had clear cerebrospinal fluid and the muscular twitchings ceased within six hours after the lumbar puncture, being the result possibly of the cortical irritability of a mild cerebral edema. In eight cases, a dry tap was recorded.

Second Series.[31]—In the second series of 100 consecutive new-born babies, bloody cerebrospinal fluid of varying degree was found in thirteen, that is, in 13 per cent.; nine fluids were bloody, three blood-tinged and one was yellow, containing many red blood cells. There was no mortality in this series. The intracranial pressure in the bloody cases ranged from 4 to 26 mm.; five punctures of spinal drainage were the largest number necessary to obtain clear cerebrospinal fluid under normal pressure. Two of the babies exhibited muscular twitchings of the face, hands and feet, and also cyanosis of the face which disappeared within six hours after the lumbar puncture; marked signs, as stupor, refusal to nurse or convulsions were not present in any of the cases. The labor in these thirteen bloody cases was normal cephalic in six, and prolonged in three, two of which terminated as cephalic presentations and one as a breech; medium forceps were used in two; one was a face presentation, and one was the child of an eclamptic mother. Jaundice was present in one case only. The coagulation time of the blood was normal in all thirteen bloody cases; in one case, clinically diagnosed as hemorrhagic disease of the new-born, there was no intracranial hemorrhage, and in the thirteen cases with bloody cerebrospinal fluid there was not a lengthened coagulation time. Ten babies were of syphilitic mothers, and in only two of them was the cerebrospinal fluid bloody. In six cases, a dry tap was recorded.

Third Series.[32]—In the third series of 100 consecutive new-born babies, bloody cerebrospinal fluid of varying degree was found in ten, that is, 10 per cent.; the fluid was red with blood in four, and straw-colored and yellow with many red blood cells in six. Six was the highest number of lumbar punctures necessary to obtain clear cerebrospinal fluid under normal pressure. There were no deaths in this series. Seven babies, born of syphilitic mothers, all had clear cerebrospinal fluid. Forceps were applied in nine cases; of the two medium applications, in one the cerebrospinal fluid was blood-tinged and in the other bloody; and in the seven low applications, only one baby had free blood in the cerebrospinal fluid. In the one case of version with breech extraction, the cerebrospinal fluid was clear. The intracranial pressure ranged from 3 to 15 mm., and again the anterior fontanel was not a reliable indicator of the intracranial pressure. The blood coagulation time was not lengthened in any of the four bloody cerebrospinal fluids, and in only one of the yellow fluids was it slightly prolonged to ten minutes (the normal clotting time being considered as from five to eight minutes). However, in four cases in which the cerebrospinal fluid was clear, the blood clotting time was from eight and one-half to eleven minutes, so it seemed that the hemorrhagic tendency in the new-born is only of minor importance as an etiologic factor in the production of the intracranial hemorrhage. Four babies, in whom the cerebrospinal fluid was clear within twenty-seven hours after birth, became jaundiced on the second, third, sixth and seventh day, respectively; in two of these babies, the blood coagulation time was four minutes, and in the others, two, ten and eleven minutes respectively. In six cases, a dry tap was recorded.

Fourth Series.[33]—In the fourth series of 100 consecutive new-born babies, the cerebrospinal fluid was bloody in four and straw-colored in three—a total of 7 per cent. One baby having bloody cerebrospinal fluid died, and the necropsy revealed extensive intraventricular, basal, supracortical and spinal hemorrhages. This baby was apparently normal at birth, but lumbar puncture, four hours after birth, revealed bloody cerebrospinal fluid under 10 mm. of pressure; the blood coagulation time was six minutes; fourteen hours after birth, general convulsive seizures occurred, with respiratory difficulty and death. Jaundice was present in four babies, in three of whom the spinal fluid was clear, and in one a golden yellow and slightly turbid, with numerous red blood cells.

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[31] Sharpe, William; and Maclaire, A. S.: Surg., Gynec. & Obst. 38: 200-206 (Feb.) 1924.

[32] Sharpe, William; and Maclaire, A. S.: Am. J. Obst. & Gynec. 8: 172 (Aug.) 1924.

[33] Sharpe, William; and Maclaire, A. S.: Am. J. Obst. & Gynec. 9: 452 (April) 1925.

In this last baby, the jaundice appeared on the seventh day, and it is interesting that the fluid from the first lumbar puncture, performed fourteen and one-half hours after birth, was clear, under 6 mm. of pressure, and the blood clotting time was seven minutes; whereas, when jaundiced, the cerebrospinal fluid was yellow with red blood cells under 8 mm. of pressure, and the blood clotting time was only four minutes.

As in the preceding three series of the new-born, neither sex predominated and approximately 50 per cent. were first-born babies. The signs observed in this series before punctures were done were: muscular twitches of the extremities and face, and convulsive twitches in five, in two of whom the cerebrospinal fluid was bloody, but in the other three, clear; poor nursing in one, and in this particular baby, the fluid was yellow with many red blood cells; cyanosis was present in one baby having clear fluid; and normal intraspinal pressure (from 5 to 8 mm. of mercury within forty-eight hours after birth) was present in forty-five cases, one of them having yellow fluid, above normal in thirty-two, six of them having bloody or yellow fluid, and below normal in eight, and in these the fluid was clear. Punctures were not done on seven premature babies. Venous contamination of puncture occurred in two cases, and in five babies the spinal canal could not be tapped, presumably because either of faulty technic or of anatomic variation. In one case the pressure was not recorded.

The blood clotting time was normal (from three to eight minutes) in eighty-one, seven of them having hemorrhagic cerebrospinal fluid; prolonged in two (eight and one half and ten minutes, respectively); below normal in one, and not recorded in sixteen (these included the babies not punctured or successfully tapped and the premature babies). The anterior fontanel was flush in thirty-eight and of them four had hemorrhagic fluid; depressed in thirty-nine, of whom three had hemorrhagic fluid, and bulging in fourteen, and in them all the fluid was clear; the status of the fontanel was not recorded in nine. Seven of the nine premature babies were not punctured on account of their low vitality; three of these babies died, and necropsy did not reveal an intracranial hemorrhage. Low forceps were used in ten, of whom one had bloody cerebrospinal fluid; there was prolonged labor in two, one having blood-tinged cerebrospinal fluid. One dry labor, one cesarean section, one frank breech and one induced labor, all had clear fluids. In one case in which there were convulsive seizures due to a mild cerebral edema with no hemorrhage present, four lumbar punctures of spinal drainage were necessary before the increased intracranial pressure was lowered, and the convulsions then ceased. In seven premature babies, puncture was not done. In five cases, a dry tap was recorded.

Fifth Series.[34]—In the fifth series of 100 consecutive new-born babies, the cerebrospinal fluid was bloody and blood-tinged in six cases; that is, in 6 per cent. Forty-four of the children were of the negro race, and this may be a factor

TABLE 1.—*Hemorrhage Cases* *

No.	Name and Sex†	Race‡	Date of Birth	Para	Blood Wassermann Mother	Blood Wassermann Babe	Character of Labor	Weight Lb.	Weight Oz.	Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
5	C. T. ♂	W	2/ 7/23	v	.....	.....	L. O. A.	..	..	Negative	Tense	Blood tinged	8	5	3	
13	V. B. ♀	W	2/15/23	i	.....	.....	R. O. A.	8	8	Cyanosis; twitches hands and legs; cord around neck	Normal	Bloody	14	4½	4	
22	H. A. ♂	..	2/23/23	iii	.....	.....	R. O. A. prolonged	8	..	Left parietal hematoma	Slightly tense	Slightly bloody	12	7	3	
33	D. B. ♀	C	3/ 3/23	iii	.....	.....	L. O. A. premature 7th month	3	13	Drowsy; nosebleed	Tense	Bloody	16	6	6	Died; hemorrhage into right ventricle; cyst of cerebellum
39	N. B. ♀	C	3/ 6/23	ii	.....	.....	L. O. A.	7	13½	Negative	Relaxed	Straw	10	7	4	
68	R. C. ♀	W	5/ 7/23	iii	.....	.....	L. O. A., dry labor	6	10	Cord around neck 3 or 4 times	Relaxed	Amber with R. B. C.	4	5	4	
75	M. C. ♀	W	5/17/23	i	.....	.....	L. O. A.	8	8	Drowsiness, failed to cry, did not close eyes, no nursing	Tense	Lumbar puncture post mortem	0	...	...	Necropsy: subarachnoid hemorrhage; brain edematous
83	H. C. ♂	W	5/19/23	vii	.....	.....	L. O. A.	7	1	Negative	Flush	Blood tinged	10	5	3	
84	L. L. ♂	C	5/17/23	i	.....	.....	Version with breech extraction	6	7	Drowsy; slight tendency to hold heels rigid	Flush	Bloody	10	5	4	
85	H. W. ♂	C	5/22/23	iv	.....	.....	L. O. A.	7	10	Slight rigidity of neck	Tense	Amber and blood tinged	8	4½	3	
105	F. D. ♂	W	6/19/23	vii	Neg.	Neg.	Normal	8	9	Negative	Slightly bulging	Straw	4	4	3	
111	S. T. H. ♀	C	6/27/23	i	Neg.	Neg.	Prolonged	7	4	Negative	Bulging	Bloody	26	4	5	Dolichocephalic
113	J. C. ♀	W	6/29/23	i	Neg.	Neg.	Normal	5	7½	Negative	Flush	Blood tinged	4	6	3	
120	P. C. ♂	W	7/ 2/23	i	Neg.	Neg.	Premature 7th mo., normal	2	12	Negative	......	Blood tinged	4	...	2	Lumbar puncture. 15 minutes after death; no postmortem of head
127	R. N. ♂	C	7/10/23	i	Neg.	Neg.	Normal	7	1½	Negative	Bulging	Bloody	12	7	3	Urine bloody
129	M. L. ♂	W	7/15/23	xii	Neg.	Neg.	Normal	7	10	Negative	Flush	Blood tinged	4	7	3	
140	N. E. ♂	C	7/23/23	ii	Neg.	Neg.	Prolonged	7	7½	Negative	Flush	Bloody	10	8	7	
150	H. K. ♂	C	8/ 1/23	i	Neg.	Neg.	Normal	7	½	Negative	Flush	Bloody	8	6½	4	
161	P. T. ♂	W	8/ 9/23	i	Neg.	Neg.	Med. forceps	5	6	Forcep marks on head	Flush	Bloody	8	7½	7	Second of twins; fluid not clear
166	A. G. ♂	C	8/11/23	i	Neg.	Neg.	Eclampsia	6	7	Negative	Slight bulging	Bloody	10	5	4	
191	W. B. ♂	C	9/ 7/23	ii	4+	Neg.	Breech	6	6	Twitchings of hands	Flush	Bloody	6	7½	5	Operation should have been performed; incomplete drainage
195	A. B. ♂	W	9/12/23	ii	Neg.	Neg.	Face pres.	8	9½	Twitchings of arms, legs, mouth; face cyanotic	Depressed	Bloody	4	5½	4	Incomplete drainage
200	A. I. ♂	W	9/17/23	i	1+	Neg.	Med. forceps	8	13½	Laceration left malar region	Flush	Bloody	8	4½	6	Jaundice third day

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34. Sharpe, William; and Maclaire, A. S.: Surg., Gynec. & Obst., to be published.

TABLE 1.—*Hemorrhage Cases—Continued*

No.	Name and Sex†	Race‡	Date of Birth	Para	Blood Wassermann Mother	Blood Wassermann Babe	Character of Labor	Weight Lb.	Weight Oz.	Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
202	L. B. ♂	W	9/19/23	i	Neg.	Neg.	Med. forceps	8	5½	Left supranuclear facial paralysis	Flush	Bloody	8	6	5	
204	F. L. ♂	W	9/21/23	i	Neg.	1+	Med. forceps	8	..	Contusion right eye, jaundiced	Flush	Blood tinged	14	5½	4	
205	P. R. ♂	W	9/23/23	i	Neg.	Neg.	Prolonged and low forceps	7	14	Twitches of hands and feet	Depressed	Bloody	15	6½	7	
208	A. D. ♀	C	9/25/23	ii	1+	Neg.	R. O. P.	4	14	Twitches hands, feet; vomits; nurses poorly	Bulging	Bloody	2	4	3	Canal missed 3 times; incomplete drainage
225	H. C. ♀	W	10/12/23	i	Neg.	Neg.	L. O. A.	8	8	Cord twisted	Flush	Yellow (clear)	14	7	3	No red blood cells
251	T. S. ♂	W	11/ 3/23	ii	Neg.	Neg.	Precipitate, L. O. A.	6	8	Negative	Depressed	Yellow (clear)	12	3	3	R. B. C. microscopically, benzidin test positive
253	J. W. ♂	C	11/ 5/23	iii	Neg.	Neg.	L. O. A.	8	6	Negative	Depressed	Yellow (clear)	12	3½	3	R. B. C. present
257	W. C. ♂	W	11/ 8/23	i	Neg.	Neg.	L. O. A.	8	4	Negative	Flush	Amber (clear)	3	5½	4	Many R. B. C.
283	P. A. ♂	W	12/13/23	ii	Neg.	Neg.	L. O. A.	7	6	Convulsions, cyanosis, frothing at mouth, resp. slow, art. resp	Depressed	Yellow (clear)	10	10	3	No R. B. C.
292	A. A. ♀	W	12/26/23	vi	Neg.	Neg.	Precipitate, L. O. A.	7	13	Negative	Depressed	Yellow (turbid)	10	7	5	Many R. B. C.
303	M. S. ♀	C	2/ 4/24	i	Neg.	Neg.	L. O. A.	6	12	Negative	Flush	Faint straw	6	3½	3	
327	E. P. ♂	C	2/26/24	ii	Neg.	Neg.	L. O. A.	6	6	None at birth, 14 hrs. later, convulsion, heart beat after resp. ceased	Flush	Bloody	10	6	2	Post mortem: supracort., basilar ventricular hemorrhage
339	M. Z. ♀	C	3/10/24	i	Neg.	Neg.	Prolonged 2 days, L. O. A.	8	2	Convulsion	Flush	Blood tinged	10	5	3	
341	W. F. ♂	W	3/13/24	iii	4+	4+	Low forceps	9	9	Ecchymosis left ear, ecchymosis left ext. ang. process. caput. L. parietal	Flush	Bloody	10	7	3	
349	E. R. ♂	C	3/23/24	i	Neg.	Neg.	L. O. A.	6	9	Negative	Depressed	Bloody	9	5½	4	
393	R. F. ♂	W	8/23/24	iii	Neg.	Neg.	L. O. A.	7	1	Nursed poorly	Depressed	Yellow (clear)	16	7½	2	No R. B. C.
398	E. H. ♀	C	8/27/23	ii	Neg.	Neg.	R. O. A.	6	6	Negative	Depressed	Amber (turbid)	12	3½	3	R. B. C., many
420	S. W. ♂	W	9/12/24	v	Neg.	Neg.	Premature, 7 months	4	3	Weak cry	Flush	Bloody	16	4	3	Died 9/19/24; postmortem refused
424	G. B. ♂	W	9/13/24	iii	Neg.	Neg.	Premature	4	1	Negative	Flush	Yellow (clear)	10	5½	3	6 to 8 R. B. C. to a field
439	W. S. ♂	W	9/29/24	v	Neg.	Neg.	Breech extraction	8	11½	Negative	Bulging	Yellow (clear)	4	6	3	R. B. C. (2-3 per field)
440	E. M. ♂	W	9/30/24	i	4+	Neg.	L. O. A.	6	2	Resuscitated in few minutes	Depressed	Bloody	18	3½	4	Transferred to hospital for treatment, Wass. C. S. F. neg.
447	F. D. ♂	W	10/ 6/24	i	Neg.	Neg.	Low forceps	6	15	Negative	Depressed	Bloody	8	5	3	Jaundiced on 3d day
498	A. P. ♂	C	12/ 3/24	i	Neg.	Neg.	L. O. A.	7	4	Negative	Depressed	Blood tinged	6	5½	3	

* Total, forty-five living patients and one, seen at necropsy, in whom puncture was not done before death (forty-six in all).

† In this column, ♂ indicates male; ♀, female.

‡ In this column, W indicates white; C, colored.

in the lower incidence of free blood in the cerebrospinal fluid. Three of the bloody cases were of primiparas. Of the six bloody cases, all were males—five white and one negro; two of them were premature, and one was a breech and the other a low forceps baby. No definite signs of the presence of bloody cerebrospinal fluid were observed, and the condition would have been overlooked if a lumbar puncture had not been performed. The coagulation time of the blood was within normal limits for each of the six cases. The fontanels were bulging in two, flush in three and depressed in one. The intradural pressure was normal in two, above normal in three and below normal in one (a premature baby). Two babies were not tapped on account of their condition of shock, and five died before a lumber puncture could be performed. In nine cases, a dry tap was recorded.

SUMMARY

In summarizing the foregoing series of 500 consecutive new-born babies on whom a lumbar puncture was performed within from twelve to twenty-four hours after birth, it will be noted that in forty-five babies there was disclosed bloody and blood-tinged cerebrospinal fluid; that is, in 9 per cent. of the entire series. One baby dying before a lumbar puncture was performed—the puncture being made fifteen minutes after death—revealed at necropsy an extensive intracranial hemorrhage with bloody spinal fluid; this case, however, has not been included as having bloody cerebrospinal fluid. It must also be remembered that as many as fifty babies, that is, 10 per cent. of the entire series, were not tapped—in thirty-six a dry tap was recorded, and in fourteen the test was not performed, as seven babies were in severe shock and seven premature babies were in poor condition.

In making the test which was described in detail in the preliminary report,[1] if bloody, blood-tinged or yellow and straw colored cerebrospinal fluid was disclosed, then another immediate confirmatory puncture was made one interspace higher—merely to prove or disprove the presence of blood in the first test. In the bloody cases, another test was made within a period of twenty-four hours, and cerebrospinal fluid was drained of an amount not to lower the pressure below the normal from 4 to 6 mm. of mercury; these daily tests were repeated until the fluid became clear and under normal pressure. As many as seven punctures

In this last baby, the jaundice appeared on the seventh day, and it is interesting that the fluid from the first lumbar puncture, performed fourteen and one-half hours after birth, was clear, under 6 mm. of pressure, and the blood clotting time was seven minutes; whereas, when jaundiced, the cerebrospinal fluid was yellow with red blood cells under 8 mm. of pressure, and the blood clotting time was only four minutes.

As in the preceding three series of the new-born, neither sex predominated and approximately 50 per cent. were first-born babies. The signs observed in this series before punctures were done were: muscular twitches of the extremities and face, and convulsive twitches in five, in two of whom the cerebrospinal fluid was bloody, but in the other three, clear; poor nursing in one, and in this particular baby, the fluid was yellow with many red blood cells; cyanosis was present in one baby having clear fluid; and normal intraspinal pressure (from 5 to 8 mm. of mercury within forty-eight hours after birth) was present in forty-five cases, one of them having yellow fluid, above normal in thirty-two, six of them having bloody or yellow fluid, and below normal in eight, and in these the fluid was clear. Punctures were not done on seven premature babies. Venous contamination of puncture occurred in two cases, and in five babies the spinal canal could not be tapped, presumably because either of faulty technic or of anatomic variation. In one case the pressure was not recorded.

The blood clotting time was normal (from three to eight minutes) in eighty-one, seven of them having hemorrhagic cerebrospinal fluid; prolonged in two (eight and one half and ten minutes, respectively); below normal in one, and not recorded in sixteen (these included the babies not punctured or successfully tapped and the premature babies). The anterior fontanel was flush in thirty-eight and of them four had hemorrhagic fluid; depressed in thirty-nine, of whom three had hemorrhagic fluid, and bulging in fourteen, and in them all the fluid was clear; the status of the fontanel was not recorded in nine. Seven of the nine premature babies were not punctured on account of their low vitality; three of these babies died, and necropsy did not reveal an intracranial hemorrhage. Low forceps were used in ten, of whom one had bloody cerebrospinal fluid; there was prolonged labor in two, one having blood-tinged cerebrospinal fluid. One dry labor, one cesarean section, one frank breech and one induced labor, all had clear fluids. In one case in which there were convulsive seizures due to a mild cerebral edema with no hemorrhage present, four lumbar punctures of spinal drainage were necessary before the increased intracranial pressure was lowered, and the convulsions then ceased. In seven premature babies, puncture was not done. In five cases, a dry tap was recorded.

Fifth Series.[34]—In the fifth series of 100 consecutive newborn babies, the cerebrospinal fluid was bloody and blood-tinged in six cases; that is, in 6 per cent. Forty-four of the children were of the negro race, and this may be a factor

Table 1.—*Hemorrhage Cases* *

No.	Name and Sex†	Race‡	Date of Birth	Para	Blood Wassermann		Character of Labor	Weight		Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
					Mother	Babe		Lb.	Oz.							
5	C. T. ♂	W	2/ 7/23	v	.....	.....	L. O. A.	..	..	Negative	Tense	Blood tinged	8	5	3	
13	V. B. ♀	W	2/15/23	i	.....	.....	R. O. A.	8	8	Cyanosis; twitches hands and legs; cord around neck	Normal	Bloody	14	4½	4	
22	H. A. ♂	..	2/23/23	iii	.....	.....	R. O. A. prolonged	8	..	Left parietal hematoma	Slightly tense	Slightly bloody	12	7	3	
33	D. B. ♀	O	3/ 3/23	iii	.....	.....	L. O. A. premature 7th month	3	13	Drowsy; nosebleed	Tense	Bloody	16	6	6	Died; hemorrhage into right ventricle; cyst of cerebellum
39	N. B. ♀	O	3/ 6/23	ii	.....	.....	L. O. A.	7	13½	Negative	Relaxed	Straw	10	7	4	
68	R. O. ♀	W	5/ 7/23	iii	.....	.....	L. O. A., dry labor	6	10	Cord around neck 3 or 4 times	Relaxed	Amber with R. B. C.	4	5	4	
75	M. C. ♀	W	5/17/23	i	.....	.....	L. O. A.	8	8	Drowsiness, failed to cry, did not close eyes, no nursing	Tense	Lumbar puncture post mortem	0	...	...	Necropsy: subarachnoid hemorrhage; brain edematous
83	H. C. ♂	W	5/19/23	vii	.....	.....	L. O. A.	7	1	Negative	Flush	Blood tinged	10	5	3	
84	L. L. ♂	O	5/17/23	i	.....	.....	Version with breech extraction	6	7	Drowsy; slight tendency to hold heels rigid	Flush	Bloody	10	5	4	
85	H. W. ♂	C	5/22/23	iv	.....	.....	L. O. A.	7	10	Slight rigidity of neck	Tense	Amber and blood tinged	8	4½	3	
105	F. D. ♂	W	6/19/23	vii	Neg.	Neg.	Normal	8	9	Negative	Slightly bulging	Straw	4	4	3	
111	S. T. H. ♀	C	6/27/23	i	Neg.	Neg.	Prolonged	7	4	Negative	Bulging	Bloody	26	4	5	Dolichocephalic
113	J. C. ♀	W	6/29/23	i	Neg.	Neg.	Normal	5	7½	Negative	Flush	Blood tinged	4	6	3	
120	P. C. ♂	W	7/ 2/23	i	Neg.	Neg.	Premature 7th mo., normal	2	12	Negative	......	Blood tinged	4	...	2	Lumbar puncture 15 minutes after death; no postmortem of head
127	R. N. ♂	O	7/10/23	i	Neg.	Neg.	Normal	7	1½	Negative	Bulging	Bloody	12	7	3	Urine bloody
129	M. L. ♂	W	7/15/23	xii	Neg.	Neg.	Normal	7	10	Negative	Flush	Blood tinged	4	7	3	
140	N. E. ♂	O	7/23/23	ii	Neg.	Neg.	Prolonged	7	7½	Negative	Flush	Bloody	10	8	7	
150	H. K. ♂	O	8/ 1/23	i	Neg.	Neg.	Normal	7	½	Negative	Flush	Bloody	8	6½	4	
161	P. T. ♂	W	8/ 9/23	i	Neg.	Neg.	Med. forceps	5	6	Forcep marks on head	Flush	Bloody	8	7½	7	Second of twins; fluid not clear
166	A. G. ♂	C	8/11/23	i	Neg.	Neg.	Eclampsia	6	7	Negative	Slight bulging	Bloody	10	5	4	
191	W. B. ♂	C	9/ 7/23	ii	4+	Neg.	Breech	6	6	Twitchings of hands	Flush	Bloody	6	7½	5	Operation should have been performed; incomplete drainage
195	A. B. ♂	W	9/12/23	ii	Neg.	Neg.	Face pres.	8	9½	Twitchings of arms, legs, mouth; face cyanotic	Depressed	Bloody	4	5½	4	Incomplete drainage
200	A. I. ♂	W	9/17/23	i	1+	Neg.	Med. forceps	8	13½	Laceration left malar region	Flush	Bloody	8	4½	6	Jaundice third day

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34. Sharpe, William; and Maclaire, A. S.: Surg., Gynec. & Obst., to be published.

TABLE 1.—*Hemorrhage Cases—Continued*

No.	Name and Sex†	Race‡	Date of Birth	Para	Blood Wassermann Mother	Blood Wassermann Babe	Character of Labor	Weight Lb.	Weight Oz.	Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
202	L. B. ♂	W	9/19/23	i	*Neg.*	*Neg.*	*Med. forceps*	*8*	*5½*	*Left supranuclear facial paralysis*	*Flush*	*Bloody*	*8*	*6*	*5*	
204	F. L. ♂	W	9/21/23	i	Neg.	1+	Med. forceps	8	..	Contusion right eye, jaundiced	Flush	Blood tinged	14	5½	4	
205	P. R. ♂	W	9/23/23	i	Neg.	Neg.	Prolonged and low forceps	7	14	Twitches of hands and feet	Depressed	Bloody	15	6½	7	
208	A. D. ♀	C	9/25/23	ii	1+	Neg.	R. O. P.	4	14	Twitches hands, feet; vomits; nurses poorly	Bulging	Bloody	2	4	3	Canal missed 3 times; incomplete drainage
225	H. O. ♀	W	10/12/23	i	Neg.	Neg.	L. O. A.	8	8	Cord twisted	Flush	Yellow (clear)	14	7	3	No red blood cells
251	T. S. ♂	W	11/ 3/23	ii	Neg.	Neg.	Precipitate, L. O. A.	6	8	Negative	Depressed	Yellow (clear)	12	3	3	R. B. C. microscopically, benzidin test positive
253	J. W. ♂	C	11/ 5/23	iii	Neg.	Neg.	L. O. A.	8	6	Negative	Depressed	Yellow (clear)	12	3½	3	R. B. C. present
257	W. C. ♂	W	11/ 8/23	i	Neg.	Neg.	L. O. A.	8	4	Negative	Flush	Amber (clear)	3	5½	4	Many R. B. C.
283	P. A. ♂	W	12/13/23	ii	Neg.	Neg.	L. O. A.	7	6	Convulsions, cyanosis, frothing at mouth, resp. slow, art. resp	Depressed	Yellow (clear)	10	10	3	No R. B. C.
292	A. A. ♀	W	12/26/23	vi	Neg.	Neg.	Precipitate, L. O. A.	7	13	Negative	Depressed	Yellow (turbid)	10	7	5	Many R. B. O.
303	M. S. ♀	C	2/ 4/24	i	Neg.	Neg.	L. O. A.	6	12	Negative	Flush	Faint straw	6	3½	3	
327	E. P. ♂	C	2/26/24	ii	Neg.	Neg.	L. O. A.	6	6	None at birth, 14 hrs. later, convulsion, heart beat after resp. ceased	Flush	Bloody	10	6	2	Post mortem: supracort., basilar ventricular hemorrhage
339	M. Z. ♀	C	3/10/24	i	Neg.	Neg.	Prolonged 2 days, L. O. A.	8	2	Convulsion	Flush	Blood tinged	10	5	3	
341	W. F. ♂	W	3/13/24	iii	4+	4+	Low forceps	9	9	Ecchymosis left ear, ecchymosis left ext. ang. process. caput. L. parietal	Flush	Bloody	10	7	3	
349	E. R. ♂	C	3/23/24	i	Neg.	Neg.	L. O. A.	6	9	Negative	Depressed	Bloody	9	5½	4	
393	R. F. ♂	W	8/23/24	iii	Neg.	Neg.	L. O. A.	7	1	Nursed poorly	Depressed	Yellow (clear)	16	7½	2	No R. B. C.
398	E. H. ♀	C	8/27/23	ii	Neg.	Neg.	R. O. A.	6	6	Negative	Depressed	Amber (turbid)	12	3½	3	R. B. C., many
420	S. W. ♂	W	9/12/24	v	Neg.	Neg.	Premature, 7 months	4	3	Weak cry	Flush	Bloody	16	4	3	Died 9/19/24; postmortem refused
424	G. B. ♂	W	9/13/24	iii	Neg.	Neg.	Premature	4	1	Negative	Flush	Yellow (clear)	10	5½	3	6 to 8 R. B. C. to a field
439	W. S. ♂	W	9/29/24	v	Neg.	Neg.	Breech extraction	8	11½	Negative	Bulging	Yellow (clear)	4	6	3	R. B. C. (2-3 per field)
440	E. M. ♂	W	9/30/24	i	4+	Neg.	L. O. A.	6	2	Resuscitated in few minutes	Depressed	Bloody	18	3½	4	Transferred to hospital for treatment, Wass. C. S. F. neg.
447	F. D. ♂	W	10/ 6/24	i	Neg.	Neg.	Low forceps	6	15	Negative	Depressed	Bloody	8	5	3	Jaundiced on 3d day
498	A. P. ♂	C	12/ 3/24	i	Neg.	Neg.	L. O. A.	7	4	Negative	Depressed	Blood tinged	6	5½	3	

* Total, forty-five living patients and one, seen at necropsy, in whom puncture was not done before death (forty-six in all).

† In this column, ♂ indicates male; ♀, female.

‡ In this column, W indicates white; C, colored.

in the lower incidence of free blood in the cerebrospinal fluid. Three of the bloody cases were of primiparas. Of the six bloody cases, all were males—five white and one negro; two of them were premature, and one was a breech and the other a low forceps baby. No definite signs of the presence of bloody cerebrospinal fluid were observed, and the condition would have been overlooked if a lumbar puncture had not been performed. The coagulation time of the blood was within normal limits for each of the six cases. The fontanels were bulging in two, flush in three and depressed in one. The intradural pressure was normal in two, above normal in three and below normal in one (a premature baby). Two babies were not tapped on account of their condition of shock, and five died before a lumber puncture could be performed. In nine cases, a dry tap was recorded.

SUMMARY

In summarizing the foregoing series of 500 consecutive new-born babies on whom a lumbar puncture was performed within from twelve to twenty-four hours after birth, it will be noted that in forty-five babies there was disclosed bloody and blood-tinged cerebrospinal fluid; that is, in 9 per cent. of the entire series. One baby dying before a lumbar puncture was performed—the puncture being made fifteen minutes after death—revealed at necropsy an extensive intracranial hemorrhage with bloody spinal fluid; this case, however, has not been included as having bloody cerebrospinal fluid. It must also be remembered that as many as fifty babies, that is, 10 per cent. of the entire series, were not tapped—in thirty-six a dry tap was recorded, and in fourteen the test was not performed, as seven babies were in severe shock and seven premature babies were in poor condition.

In making the test which was described in detail in the preliminary report,[1] if bloody, blood-tinged or yellow and straw colored cerebrospinal fluid was disclosed, then another immediate confirmatory puncture was made one interspace higher—merely to prove or disprove the presence of blood in the first test. In the bloody cases, another test was made within a period of twenty-four hours, and cerebrospinal fluid was drained of an amount not to lower the pressure below the normal from 4 to 6 mm. of mercury; these daily tests were repeated until the fluid became clear and under normal pressure. As many as seven punctures of drainage were necessary in several cases, and yet the average number was slightly over three.

There have been three deaths in this series of newborn babies on whom a lumbar puncture revealed blood in the cerebrospinal fluid—two in the first hundred and one in the fourth hundred. Postmortem examinations disclosed a large ventricular hemorrhage in the first, extensive supracortical hemorrhage and cerebral edema in the second, and large supracortical, basal, subtentorial and spinal hemorrhage in the third baby. Their common signs were stupor and refusal to nurse; convulsive twitches were present in only the third baby.

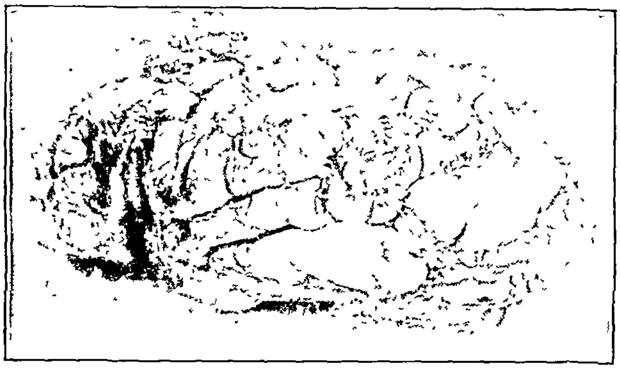

Fig. 1.—Extensive supracortical hemorrhage in a new-born baby having convulsive twitches; death fourteen hours after birth; necropsy disclosed supracortical, basal, subtentorial and spinal hemorrhage.

The clinical signs suggestive of an intracranial lesion have been most meager and were usually apparently lacking. Only seventy-three babies exhibited clinical signs, and their order of frequency was the following: muscular twitches of the hands and fingers in fifteen, in only five of whom was the cerebrospinal fluid bloody; muscular twitches of the feet and toes in eleven, of whom only four had bloody fluid; prolonged cyanosis in nine, and only in two was blood disclosed in the fluid; poor nursing in seven, of whom two had blood in the fluid; four were unusually drowsy and two of these had blood in the fluid; the presence of rigidity in two cases was very significant, in that both babies had bloody fluid; respiratory difficulties in mild degree, such as slightly irregular and labored breathing in fourteen babies, of whom only two had bloody fluid, and other signs, such as frothing at the mouth in one baby having yellow fluid, a supranuclear facial palsy in one having bloody fluid, and epistaxis in two, of whom one had bloody fluid. That is, in seventy-three cases having clinical signs suggestive of a possible intracranial lesion, only twenty-five had blood in the cerebrospinal fluid and eight were not recorded. The intradural pressure in these seventy-three cases having clinical signs was increased in thirty, normal in twenty-eight and diminished in six. The anterior fontanel was flush in twenty-four, bulging in fifteen and depressed in twenty-five. The blood clotting time was normal in thirty-five, prolonged in six and decreased in ten. The mother's blood Wassermann test was positive in six. From the foregoing observations, the possible signs of an acute intracranial hemorrhage *of mild degree at the time of birth are inconstant* and apparently in many cases entirely lacking.

In the forty-five babies having blood of varying degree in the cerebrospinal fluid, thirty-three were males and twenty-two were first children; only four were premature babies. The labor was normal left occipito-anterior and right occipito-anterior in twenty-four; prolonged in seven; precipitate in three; low forceps in three, one of which followed a prolonged labor; medium forceps in four; breech extraction in two; version with breech extraction in one, and a face presentation in one. The anterior fontanel was flush in twenty; tense and bulging in eleven, and depressed in fourteen. The cerebrospinal fluid was bloody in twenty-two; blood-tinged in nine, and yellow in fourteen. The blood clotting time was within normal limits for each one of the babies having blood in the cerebrospinal fluid, varying from three minutes in one to ten minutes in another baby—the average being five and one-half minutes. The intradural pressure averaged 10 + mm.—the lowest being one at 2 mm., one at 3 mm. and seven at 4 mm., and the highest being one at 26 mm., one at 18 mm., two at 16 mm., one at 15 mm. and three at 14 mm.

Table 2.—*Cases With Signs*

		Mother's Blood Wassermann		Intradural Pressure				Anterior Fontanel				Blood Clotting Time				Character of Spinal Fluid			
Signs	No. of Cases	Positive	Negative	Increased	Normal	Diminished	*Not Recorded*	Flush	Bulging	Depressed	Not Recorded	Normal	Prolonged	Decreased	Not Recorded	Clear	Bloody	Yellow	Not Recorded
Poor nursing	7	0	7	3	2	1	1	0	3	2	2	2	0	4	1	4	1	1	1*
Twitches of hands	15	3	12	5	7	1	2	4	4	4	3	11	0	1	3	8	5	0	2
Twitches of feet	11	2	9	5	3	1	2	2	3	4	2	8	0	1	2	5	4	0	2
Convulsions	2	0	2	2	0	0	0	1	0	1	0	1	1	0	0	0	1	1	0
Cyanosis	9	0	9	2	6	0	1	5	1	3	0	4	2	0	3	6	2	1	0
Drowsiness	4	0	4	3	0	0	1	2	1	0	1	0	0	1	3	2	1	0	1*
Rigidity	2	0	2	2	0	0	0	2	0	0	0	1	0	0	1	0	2	0	0
Epistaxis	2	0	2	1	1	0	0	1	1	0	0	0	0	0	2	1	1	0	0
Weak cry	3	0	3	1	0	2	0	2	0	1	0	2	1	0	0	2	1	0	0
Vomiting	1	0	1	1	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0
Frothing at mouth	1	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0
Respiratory difficulties	14	1	13	4	8	1	1	4	1	8	1	4	1	3	6	11	1	1	1
Failure to cry	1	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1*
Left supranuclear facial palsy	1	0	1	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0
Total	73	6	67	30	28	6	9	24	15	25	9	35	6	10	22	40	20	5	8

* This child evincing those three signs died before lumbar puncture; postmortem examination revealed subarachnoid hemorrhage and edema of brain.

Seventeen babies became jaundiced, in only two of whom was the cerebrospinal fluid bloody and under 8 mm. and 14 mm. of pressure, respectively; the blood clotting time was four and one-half and five and one-half minutes, respectively; five and three lumbar punctures of spinal drainage were necessary to obtain clear cerebrospinal fluid.

The Wassermann test was positive in both mother and child (4 plus) in only one case in which there was free blood in the cerebrospinal fluid; it was 4 plus in two mothers but negative in their babies, and 1 plus in two mothers but negative in their babies, and 1 plus in one baby but negative in the mother.

As noted above, the blood clotting time has been within normal limits for each baby having free blood in the cerebrospinal fluid, and it has been prolonged in only six cases, and yet these six babies had clear cerebrospinal fluid. The fact that in this series of cases the blood clotting time was taken within forty-eight hours after birth—and it has been observed that even in the condition of hemorrhagic disease in the new-born the blood clotting time may be within normal limits until the third day after birth, when it becomes lengthened—may account for the low incidence of a prolonged clotting time in this series. Besides, the bleeding time may be lengthened and yet the clotting time be within normal limits—the former condition being the more important and serious factor in the cases of intracranial hemorrhage.

TABLE 3.—*Jaundice Cases*

No.	Name and Sex	Race	Date of Birth	Para	Blood Wassermann		Character of Labor	Weight		Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
					Mother	Babe		Lb.	Oz.							
93	J. L. ♂	W	6/ 1/23	ii	Neg.	Neg.	L. O. A.	8	..	Jaundice	Relaxed	Clear	6	...	1	
95	M. P. ♀	W	6/ 3/23	i	Neg.	Neg.	Prolonged L. O. A.	6	13	Head small; jaundice	Closed	Clear	5	...	1	
154	T. J. ♂	W	8/ 6/23	i	Neg.	Neg.	Low forceps	7	8	Jaundice	Flush	Clear	4	7	1	Head not opened; died 8/10/23, postmortem negative
200	A. I. ♂	W	9/17/23	i	1+	Neg.	Med. forceps	8	13½	Laceration, left malar region	Flush	Bloody	8	4½	5	Jaundice 3d day
201	G. D. ♀	W	9/18/23	v	Neg.	Neg.	Normal	5	9½	Nursed poorly, C. S. F. neg. bile	Depressed	Clear	6	4	6	Jaundice 6th day
204	F. L. ♂	W	9/21/23	i	Neg.	1+	R. O. P. → R. O. A., med. forceps	8	..	Jaundiced, contusion, rt. eye	Flush	Blood tinged	14	5½	3	
214	J. M. ♂	W	10/ 3/23	i	Neg.	Neg.	L. O. A.	8	8	Cord very twisted, poor nursing	Flush	Clear	8	11	3	Jaundice 10/10
216	C. S. ♀	W	10/ 6/23	v	Neg.	Neg.	R. O. A.	7	10	Nursing poorly	Flush	Clear	8	10	3	10/9 jaundice
228	J. A. ♂	C	10/15/23	ii	Neg.	Neg.	L. O. A.	7	..	Cord twisted	Depressed	Clear	8	4	2	Jaundiced 10/16
301	J. W. ♂	W	2/ 2/24	i	Neg.	Neg.	R. O. A. 8th month premature	3	14½	Urobilin, bile negative	Flush, bones overriding	Clear	5	2½	2	Jaundiced 2/8
313	L. H. ♀	W	2/15/24	i	Neg.	Neg.	Premature, 8th month	5	2	....	Flush	Clear	6	7	2	Jaundiced 2/23
385	J. G. ♀	W	7/23/24	iii	.....	4+	Premature, 7th month	..	..	Desquamation of skin, jaundice signs of syphilis	......	......	..	...	..	Died same day; no postmortem
388	G. R. ♀	W	7/22/24	viii	Neg.	Neg.	R. O. A.	7	15½	....	Slight bulging	Clear	6	5½	1	Jaundiced 2d day
390	L. S. ♀	W	7/25/24	i	4+	Neg.	L. O. A.	9	..	Jaundiced	Slight bulging	Clear	12	5	1	
395	R. C. ♀	W	8/24/24	iii	Neg.	Neg.	L. O. A.	6	5	....	Flush	Clear	8	5½	1	Jaundiced 8/30
458	J. C. ♂	W	10/18/24	ii	Neg.	Neg.	L. O. A.	6	6	....	Depressed	Clear	8	5	1	Jaundiced 10/25
460	A. A. ♂	W	10/18/24	iii	Neg.	Neg.	R. O. A.	6	12	....	Depressed	Clear	20 (crying)	...	1	Jaundiced 10/25

IMPRESSIONS

1. Intracranial hemorrhage of varying degree in the new-born occurs rather frequently, in 9 per cent. of this series.

2. Its acute signs are often meager and may be apparently entirely absent, the more common signs being from drowsiness to stupor, from difficulty to refusal to nurse and from muscular twitches to general convulsive twitches.

3. First born, full-term males having difficult prolonged labors are more liable to this complication, forceps being used as a last resort rather than their early application; medium forceps and breech extraction.

4. Hemorrhagic disease of the new-born is not a common etiologic factor, at least in this series of cases, in which puncture was done and tests were made within from twenty-four to forty-eight hours after birth.

5. Lumbar puncture as an early diagnostic method when the hemorrhage is still in fluid form, and as a therapeutic means of spinal and cranial drainage, is a simple and safe procedure in the absence of severe shock.

6. The early recognition and the appropriate treatment of the acute condition of intracranial hemorrhage in the new-born may thus lessen that large chronic group of physically impaired and mentally retarded children.

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ABSTRACT OF DISCUSSION

DR. J. B. SIDBURY, Wilmington, N. C.: My studies have been in a somewhat different direction than Dr. Sharpe's. I have included in my study 130 cases of hemorrhagic disease of the new-born. The nurse collects the blood in a test tube from the umbilical vein, and the clotting time is recorded. A second test is made after from three to five days, and a third test is made before the baby goes home. I divided the cases into three separate groups: First, the cases of hemorrhagic disease with clinical signs; that is, those cases that gave symptoms of bleeding, either threatened oncoming hemorrhage or bleeding from some other cause. In that group there were sixteen cases. Second, the cases with no demonstrable bleeding, of which there were thirty-one. Third, cases with normal bleeding time and no clinical symptoms, of which there were eight. Slightly more than 37 per cent. of the 130 cases belong in the classification of hemorrhagic disease of the new-born. Of this number there were sixteen which were definitely hemorrhagic disease of the new-born. Eight showed intracranial hemorrhages by lumbar puncture, and repeated lumbar punctures were done until the spinal fluid was clear. Of the sixteen patients that had definite hemorrhagic disease of the new-born, four died before any treatment could be instituted. One died over night and two others died while we were attempting to get blood ready for transfusion. Fifty of these patients received lumbar punctures, and of these eight had bloody spinal fluid. Some of them did not have prolonged bleeding time during the first twenty-four to forty-eight hours of life, but during the first week the bleeding time was increased, even to the extent of from thirty to forty minutes. Of the four babies that died, three had 4 plus Wassermann reactions. The necropsies showed hemorrhage in the brain, liver, pericardium and other viscera.

Dr. J. B. De Lee, Chicago: Thirty years ago I was in a position to make necropsies on a large number of new-born children, and I was struck with the frequency of hemorrhages in the brain and spinal cord and even in the prolongation of the dura mater into the sac beyond the lower extremity of the spinal cord—subdural and intradural hemorrhages the whole length of the cerebrospinal system. I have had occasion ever since to notice this occurrence. The frequency of hemorrhages in the brain and spinal cord that were macroscopically and microscopically determined was recently brought out by Schwartz. He said that in 65 per cent. of 130 children who came to necropsy before the age of 6 months there were hemorrhages or the results of hemorrhages in the brain, and he believes that a large majority of the diseases of children in the first six months after birth are the immediate or remote effects of these hemorrhages. Now it remains for a neurologic surgeon to shock our obstetric brothers into a realization of the frequency of this cerebral damage. The point to be noticed with great clearness is that these injuries occur not alone in hard forceps, version and extraction deliveries but also in so-called normal spontaneous deliveries. It therefore behooves us to determine the causes with a view, of course, for their prevention. The first thing that strikes us is that prolonged natural labor is a most potent cause of the trouble. That immediately brings to mind certain traumatisms or conditions that produce caisson disease. The child during labor is under pressure and it has also suffered from a slight degree of asphyxia throughout the whole labor, similar to caisson workers. When the child's head is born, that part of the body is relieved of the pressure; but the body itself is continued under pressure and as a result the blood is forced into the brain with increased power, resulting, if the blood vessels of the brain are damaged, in minute or larger hemorrhages. This point is very well brought out in modern times in the use of pituitary extract. Our pathologic department makes a diagnosis of pituitary extract death in the child at postmortem without inquiring into the previous history of the case, simply from the macroscopic findings. The reason is plain. The pressure effects exerted by the action of the drug and the chronic asphyxia natural to labor become more severe when the drug is given and later become acute asphyxia. There is some degeneration of the blood vessels produced by chronic asphyxia. There is also some alteration of the blood produced by chronic asphyxia. These, either one or the two together, may be the fundamental cause of hemorrhage and may, as the last speaker said, explain the hemorrhagic diathesis of the new-born; but hemorrhagic diathesis of the new-born is almost unknown in infants delivered by cesarean section. It seems, therefore, that this condition of the blood, if it does occur, is due to a passing influence exerted on the baby during labor. How can this traumatism be avoided? In the first place, we must recognize that the so-called natural powers of labor can produce direct and indirect damage to the brain. The uterine muscle is strong enough to fracture the skull and to fracture the arms and also to produce such increased abdominal tension in the body as to provoke hemorrhages in the peritoneum and in the liver. A mild reduction in the power of the uterine contractions can be effected by anesthetic methods which we employ, either scoplamin-morphin or Gwathmey's synergistic method or morphin alone. The conduct of the first stage of labor tends to reduce the damage of the blood, and the proper conduct of the second stage aims to reduce damage to the brain and cord tissues. I am putting in a plea for a more conservative, which sometimes means more intervention, course in labor, the relief of pain especially in the first stage and the prevention of damage in the second stage, by proper intervention before asphyxia of the child or injury to its delicate structures has been effected.

Dr. William Sharpe, New York: It was indeed surprising that the blood coagulation time was not found lengthened in a larger number of cases in this series; in fact, not one of the children with blood in the spinal fluid had a lengthened coagulation time in this series. Dr. Sidbury, in explaining this to you, is, in my opinion, correct. Very often in hemorrhagic disease of the new-born the coagulation time is not lengthened until after the third day of life; these tests were made within from twenty-four to forty-eight hours after birth and possibly, if any of these did have a lengthened coagulation time later, these cases might be considered latent hemorrhagic disease of the new-born at the time of birth; however, I do not believe that these infants having blood in the cerebrospinal fluid within forty-eight hours after birth without a lengthening of the blood coagulation time should be considered as presenting hemorrhagic disease of the new-born unless the blood coagulation time does become definitely lengthened later, and that this lengthening of the coagulation time should be in no way secondary to the hemorrhage itself as might result from a process of hemolysis. Whether the absorption of hemorrhage within the cerebrospinal dura or hemorrhage elsewhere within the body, as intraperitoneal, does tend to lengthen the coagulation time after several days of its existence is not known; I think that some investigation along this line might be of value. Dr. De Lee has very well emphasized the importance of intracranial hemorrhage in the new-born—not only in its immediate acute effects but also in the chronic conditions resulting from the incomplete absorption of intracranial hemorrhage occurring at the time of birth; Dr. De Lee has mentioned the article of Schwartz of Berlin, and I might add that only within the last ten months Schwartz has written that "the pathology of the first month of life is completely dominated by the birth injuries of the brain." And Fischer of Basel has stated that his postmortem observations at the institute have convinced him that "the 10 per cent. of deaths during the first month are chiefly due to cerebral birth injuries." Huenekens, within the last year, stated that "the recognition of hemorrhage of the new-born is a most neglected phase in their care and yet it is a most important one." I hope that similar tests may be made in other clinics merely to prove or disprove our findings of the frequency of intracranial hemorrhage in the new-born, and in this manner it may be possible to develop a method of treatment of the acute condition and thus lessen the increasing number of children with chronic cerebral spastic paralysis with their varying degrees of mental retardation.

Transportation of Lead in the Body.—That the greater part of the lead in the blood is held by the plasma and that but little is carried in the cells has been ascertained by experimentation. . . . When a soluble salt of lead is added to blood serum, a precipitate, probably lead albuminate, an organic salt, forms at first and then dissolves. This is not particularly insoluble in water and is quite sensitive to changes in acidity. The maximum precipitation occurs at p_H 5.8, which is propably the iso-electric point, for above or below this the salt redissolves. The precipitate is white and separates easily from solution. When dissolved in a few drops of dilute hydrochloric acid and treated with hydrogen sulphide gas, no change in color occurs until after a short time lead sulphide precipitates rapidly.—Aub, Fairhall, Minot and Reznikoff: Lead Poisoning, Baltimore, 1926.

THE PRODUCTION OF EPITHELIAL LINED TUBES AND SACS

AN EXPERIMENTAL STUDY *

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AND
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In the course of another series of experiments, it was noted that epithelial lined cavities were occasionally formed as a by-product. Realizing the possible clinical importance of this finding, we undertook a group of experiments with the hope that a practical method of producing epithelial lined tubes and sacs might be developed.

METHOD

The study was made on a series of twelve dogs on each of which two epithelial lined cavities were produced. Under ether anesthesia, the abdomen was shaved and washed with green soap followed by benzine and alcohol. The skin was then painted either with 5 per cent picric acid in alcohol or with 2 per cent mercurochrome-220 soluble in alcohol-acetone solution.[1] The latter was found to be much more efficacious than iodine in cleansing the skin and somewhat better than the picric acid solution. A whole thickness graft was then cut, its shape depending on whether it was desired to make a tube or a sac. If the object was a tube, the graft was cut long and narrow, the width of the graft being slightly greater than the diameter of the desired tube. If a sac was desired, the graft was cut in the shape of an ellipse with a width nearly approaching its length. The graft was then placed directly on one of the abdominal muscles from which the fascia had been stripped back, and was sutured in position under approximately the same tension it had had as part of the external skin (fig. 1). The muscle fascia was drawn over the graft and sutured so as to form two layers; then the subcutaneous tissues and the skin were carefully closed (fig. 2). The grafts were left in place from twenty to forty days. The animals were then killed and the buried tissues with adjacent structures were carefully removed and fixed in solution of formaldehyde (4 per cent).

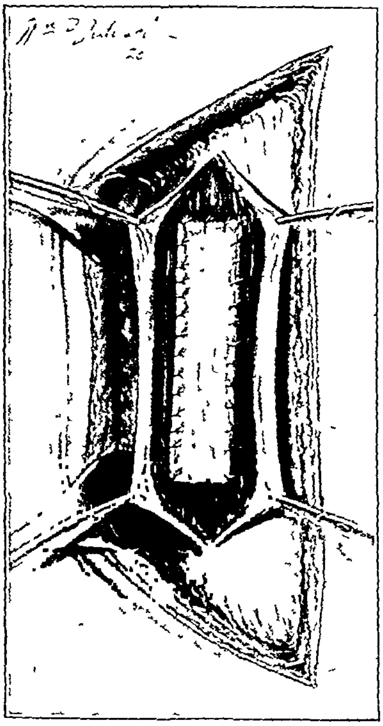

Fig 1.—Whole thickness graft sutured under the desired tension directly on muscle tissue, the line of the skin incision and retraction of the skin over the muscle may be noted.

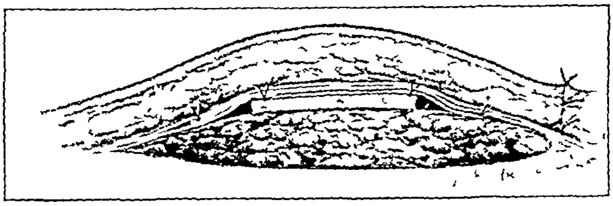

Fig. 2.—Overlapping of muscle fascia over the graft; the line of skin closure should be noted.

COMMENT

The result of this procedure was the formation of an epithelial lined cyst whose shape depended on the shape of the buried graft (figs. 3 and 4). The epithelium of the graft grew outward from its margins and in every case completely covered the contiguous tissues. The thickness of the epithelium varied on the two sides of the cyst, that on the side occupied by the whole thickness graft naturally being thicker than that on

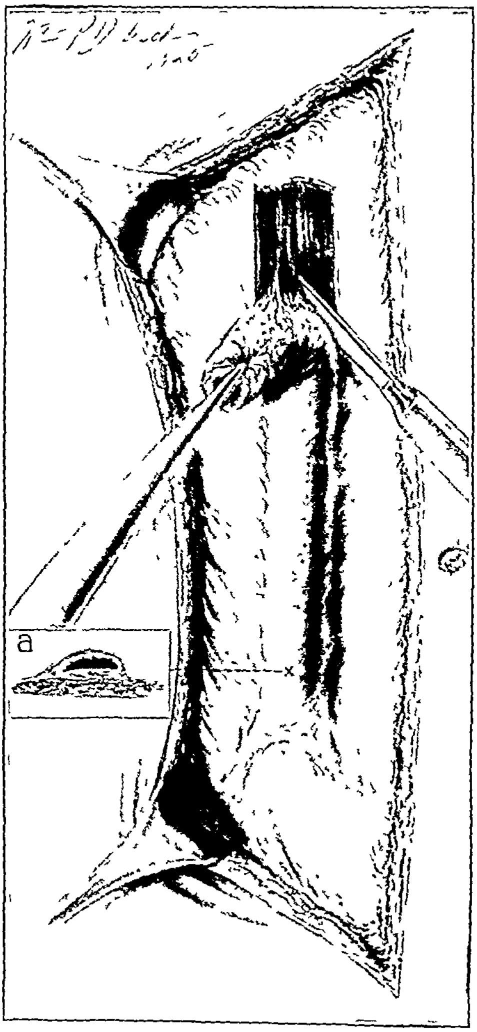

Fig 3.—Appearance of epithelial lined tube, 32 days old, being raised from the rectus muscle: *a*, cross section of this tube showing the epithelial lining, which has a rough appearance because of exfoliated epidermis and growth of hair.

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* From the Surgical Department of the Johns Hopkins University and Hospital.

[1] Mercurochrome 220 soluble, 2 Gm., distilled water, 35 cc., alcohol, 95 per cent, 55 cc.; acetone, 10 cc. The mercurochrome is dissolved in the water and then the alcohol and acetone are added to the solution.

the opposite side, where it was merely the outgrowth from the graft. As the age of the cyst increased from 20 to 40 days, the thickness of this epithelial layer increased (fig. 5). Beyond forty days another factor comes into play; i. e., the pressure exerted by the fluid secreted within the cyst. This, if allowed to increase, will eventually cause a necrosis of the cyst lining, with maceration of its epithelium. As this is not desirable, forty days may be taken as the maximum time allowable for the formation of a proper cyst. On the other hand, the growth of the epithelium is not complete under twenty days, so that these time limits establish themselves rather definitely, for the object in view.

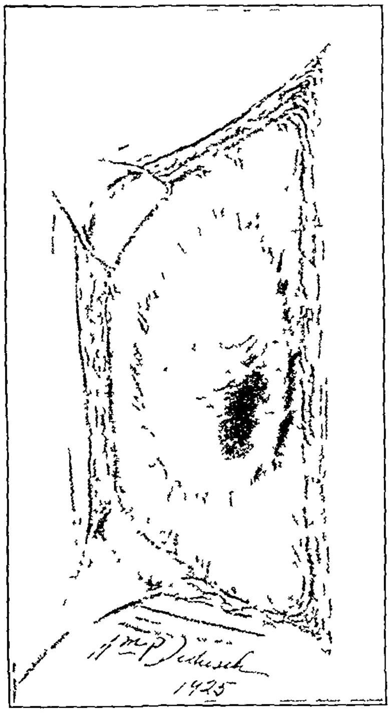

Fig 4.—Epithelial lined sac twenty eight days after the implantation of the graft, the fascia layers are intact,

Examination of a cross section of these tubes or sacs shows not only that the epithelium surrounds the lumen but that it is several cells deep and is in a viable condition. On the side opposite the graft, the wall of the tube depends much on the nature of the overlying tissue for its thickness and ability to retain its shape (fig. 6). The fascia serves admirably for this purpose, although if a thicker wall is desired the graft could as easily be buried between two muscles or in the body of the muscle and thus a tube or sac be obtained which was possessed of a muscular wall throughout.

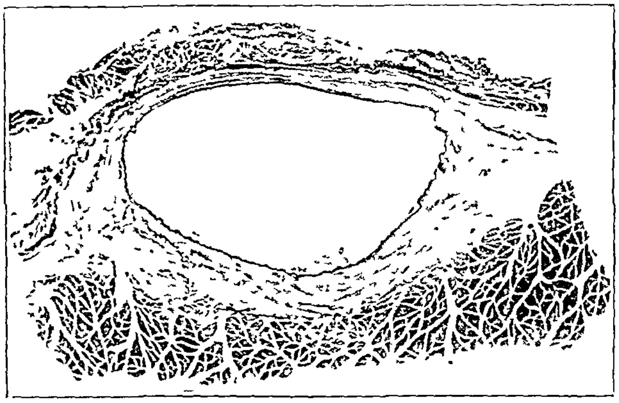

Fig 5.—Cross section of an epithelial lined tube, magnified· The graft, which is directly on the muscle, has blended into the surrounding structures to such an extent that it is difficult to differentiate sharply its original outline; the epithelial lining is continuous, as are also most of the connective tissue fibers

The cysts were of various sizes. The largest tube measured 18 cm. in length and 2.5 cm. in diameter, whereas the smallest was about 2.5 cm. in length and 0.2 cm. in diameter. Little success was obtained in the sacs that were more than 6 cm. in diameter, because the epithelium did not grow fast enough to line the larger sacs before the pressure of the cyst fluid became so great as to prevent further growth. The reason is easily understood. One-half the circumference of the cyst, which is the distance the epithelium has to grow, increases as $\frac{\pi r^2}{2}$ so that any slight increase in diameter means a correspondingly great increase in circumference. For example, in a cyst that has a diameter of 6 cm., the epithelium must grow out from the margins for a distance of about 7 cm. from each edge, to meet and completely line the cyst. This it does usually in about thirty-five days. If, perchance, the epithelization is not complete in forty days, the pressure of the secreted cyst fluid usually inhibits any further extension.

For these reasons, a cyst measuring 6 cm. in diameter seems to be the maximum that it is possible to obtain by this method. In this discussion, a shrinkage of approximately 10 per cent has been taken into account, this being about the normal amount of contraction.

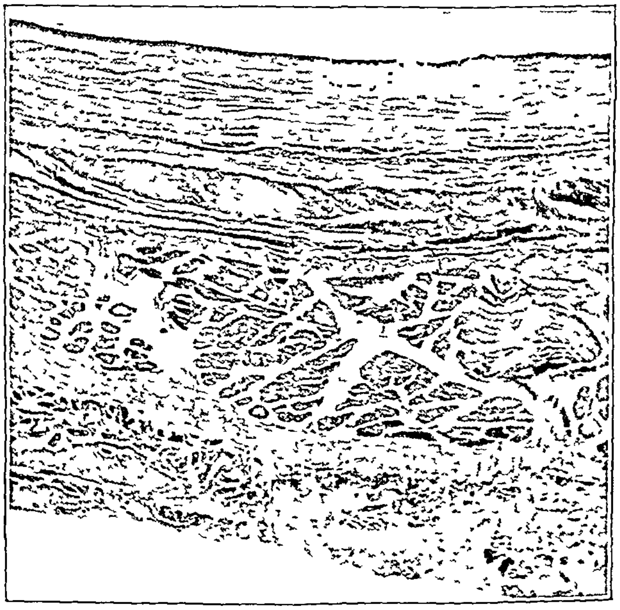

Fig 6.—Section of same tube opposite graft, seen under high power: The structures, excepting the skin and subcutaneous tissue, making up the wall of the tube are shown, the epithelium lining the tube, also the connective tissue and the muscle, may be noted.

The malpighian layer of the graft is the portion that makes the outward growth. It is closely followed by a supporting layer of fibroblasts, which later shrinks and causes the contraction referred to above. The squamous layer develops much later, as the layers of the malpighian cells become thicker. The outgrowth occurs from all margins of the graft, clinging to the tissues that have been closed over it, and progresses until there is a meeting of the epithelium on the wall of the cyst opposite the whole thickness graft.

The hair on the buried whole thickness grafts was undesirable, of course, although it in no way hampered our experiments. However, it does serve to emphasize the necessity for selecting non-hairbearing skin for the whole thickness graft, if the method is to be of value for permanent surgical work.

Stronger and larger cysts might be obtained in clinical work by late drainage through a small opening under strict aseptic procedures. Aspiration would be even better for this purpose.

The facts brought out by these experiments may be of considerable value, as the formation of epithelial lined tubes and cavities that will be permanent is the key to the solution of a number of difficult clinical problems.

Among the problems to which it may be applied might be mentioned the formation of the buccal sulcus; the relaxation of scar tissue, both superficial and deep, and formation of the esophagus. A further report on the clinical use of the information gained by this experimental work will be presented at a future time.

CONCLUSIONS

Epithelial lined tubes or sacs can be consistently produced by burying whole thickness grafts under aseptic conditions.

The strength of the walls of these cysts depends on the tissues on which the graft is placed and on those which are closed over it.

The shrinkage is comparatively small.

The largest cyst produced was that formed by a graft 6 cm. wide.

The shape of the cyst can be regulated by the size and shape of the graft.

OSTEOMYELITIS OF THE INNOMINATE BONE

REASONS FOR RARITY OF LOCATION; METHODS OF REPAIR, OPERATIVE AND OTHERWISE [*]

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I employ the term osteomyelitis in the title of this paper not in its clinical but rather in its pathologic significance. It is a notable fact that the innominate bone is not frequently the site of any inflammatory processes. Not more than 7 per cent. of all osteomyelitic lesions in bone occur here. So far as tuberculous lesions are concerned, I do not know the figures, but feel confident that the percentage is even less. Somewhat the same thing is true of other flat bones, as the skull, the scapulae and the ribs.

There must be some explanation for this relative exemption, an explanation that has to do with the protection these structures get from certain influences that are provocative of infection in bone. The rôle played by trauma in the incidence of disease conditions, no matter what they are, is a moot question. Workmen's compensation laws and accident insurance provisions have not tended to lay any less emphasis on questions of this sort as they arise in accident litigation. It has been held for a long time that in the etiology of infective processes trauma plays a part or might play a part, contributory in character, but serving to make easy the work of the primary causes of all inflammation; viz., the specific organisms themselves. This is a truism having general acceptance. It cannot be that a mere difference in the shape of a bone is the factor determining whether it shall be the subject of bacterial invasion or not. It may be that the amount of red bone marrow, the location and vascularity of the epiphyses, etc., has something to do with the ease with which the blood stream conveys the infecting organism into a favorable locality for its growth and development. That would concern the primary one of the two factors referred to above as being concerned in the incidence of an osseous infection. It may be that protection of the osseous structure from the strains and traumatisms of life is reason enough for exemption, to a relative degree, of those skeletal structures from becoming the site of inflammatory processes. If this is true, then the second of our well recognized causative factors in the excitation of osseous inflammations is affected. If it can be shown in the case of the ribs, scapulae and innominate bones that both of these factors are concerned, then not only is the less frequent incidence of diseases of this sort in these localities made understandable, but also the general principle underlying the extent to which trauma plays a rôle in the incidence of disease receives confirmation.

Let us take up this matter from these two anatomic standpoints. In the first place, the pelvic girdle is put together very substantially. The ligaments that join the various bones are very strong and are so distributed and reinforced by fascial and muscular backing that they are capable of withstanding great strain. The infrequency with which one ever hears of an actual demonstrable separation or dislocation at the juncture of the pubic bones or the articulations of the ilia with the sacrum confirms the foregoing postulate. Spondylolisthesis, or forward luxation of the last lumbar vertebra on the sacrum, is a great rarity, as are all displacements of vertebrae outside the minds of the osteopaths. The sacro-iliac joints are true joints, so far as their structure is concerned, but are placed where they are to act as shock absorbers. Consequently, the amount of motion normally present is very slight and is controlled or limited to this trifling amount by the strength of the ligaments holding the ilia in relation to the sacrum, in large part, and secondarily by the conformation of the joint surfaces and wedging of the sacrum between the ilia. At the symphysis pubis there is very little motion, and between the last lumbar and the top of the sacrum there is also very little, whereas at the sacro-iliac joints there is only enough to change the diameters of the superior and inferior straits during confinement to a possible one-quarter inch.

We have, then, two important causes for the incitement of inflammatory processes in bone pretty effectually cut out; viz., trauma from without as well as from within, for when motion in contiguous articulations is barred, the possibility of infliction of trauma through them to the bones entering into their make-up is eliminated to a very large extent. When we consider the way the ribs articulate with the spine and the rounded conformation of the thorax, we see here conditions unfavorable for the infliction of trauma, in a manner or to a degree sufficient to establish a locum resistentiae minoris in the ribs, clavicles or scapulae; for somewhat the same situation prevails in these localities as was noted in the pelvic girdle; viz., joints on either end of the rib providing little motion and a contour which, coupled with the springiness of the rib, diminishes the intensity of any trauma. Fractures of ribs, though frequent, do not furnish a large proportion of all fractures, which fact also indicates that the foregoing reasons are probably operative in accounting for the relative infrequency of broken ribs.

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[*] Read before the Section on Orthopedic Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

In the skull, dissociation from a joint with any considerable motion and a rotundity adapted to the shedding of trauma, so to speak, puts this set of flat bones in the same category with the ribs and pelvic girdle, so far as suceptibility to traumatic influences is concerned.

In regard to the second anatomic factor having an admitted bearing on the localization of infective processes in bone, I shall now have something to say. I have said "admitted bearing" because I assume that all are agreed that it is through the blood stream that infections reach the place where they create those destructive lesions characteristic of the particular process under discussion. Furthermore, in the case of tuberculous infections showing a predilection for epiphyseal centers, it has been pretty generally assumed that vascularity of the epiphyses accounts in large measure for it. Bone marrow is the seat of considerable metabolic activity, but of not as great an amount as that which must go on where the cellular proliferation concerned with growth is taking place. Nevertheless, the fabrication of red blood corpuscles must entail considerable metabolic change and call for greater vascularity than is demanded in most soft part tissues. We must assume also that, in accounting for the greater prevalence of osteomyelitis in the shafts of long bones and of tuberculosis in their epiphyses, some consideration must be given to the fact that the tubercle bacillus is more difficult of cultivation, even in the laboratory, than is *Staphylococcus aureus*. Hence, we might expect a greater affinity on the part of the tubercle bacillus for localities providing the more inviting feeding grounds, other things being equal.

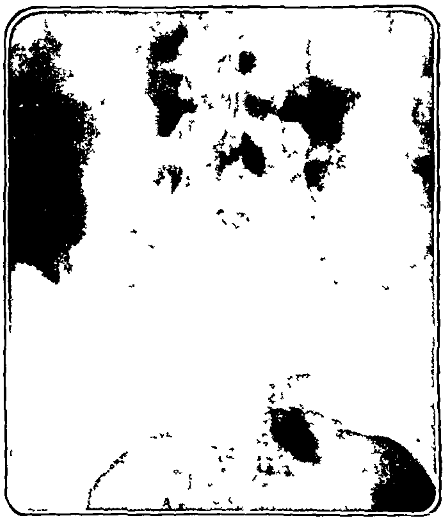

Fig 1 (Case 1).—Obliteration of sacro-iliac joint by an inflammatory process, probably an osteomyelitis, the pathologic changes in which terminated in appearances that were very similar to osteitis fibrosa

The thinner layer of marrow between the cortical plates of flat bones may very well provide a less attractive environment for *Staphylococcus aureus* than the richer and more abundant marrow of the long bones, and for this reason, in part at least, may account for the relative infrequency of osteomyelitis in the flat bones of the body. The location of the ossification centers or epiphyses and the direction of the nutrient arteries in the long bones determine the times when epiphyses located at opposite ends of these bones unite with their diaphyses, thus indicating the extent to which blood supply determines bony growth, and if normal cellular activity is thus accentuated, why not abnormal? The shafts of long bones have commonly one ossification center in the midportion of the shaft, near the foramen for entrance of the nutrient artery. Such accessory ossification centers as they may have are for the development of any anatomic tubercles or outstanding prominences that are characteristic of them, as for example in the femur, beside the central one, there is one for each trochanter, one for the head and one for each of the condyles. In this bone the nutrient artery is directed toward the upper end, the epiphysis of which unites before the lower epiphysis. In the flat bones, there is one ossification center for the major portion of the bone, and if there are special centers required for the development of special features they are provided, as in the long bones; but there are fewer definite nutrient foramina.

REPORT OF CASES

Each of the four cases to be reported presents certain features that are interesting as bearing on the general etiology of osteomyelitic lesions of the innominate bone and furnishes an answer to some of the queries raised by those who have reported such cases in the literature. All the patients are adults varying in age from that of a college student to that of an elderly woman. One lesion was almost certainly of tuberculous origin; two were probably streptococcic, and the fourth was in all probability caused by *Staphyloccocus aureus*, though there may have been a mixed tuberculous infection. One patient died, more than a year after operation, from pulmonary tuberculosis. In the probable streptococcic cases the patients are both well and have remained so for more than two years following their operations; and the fourth, the patient in whom there may be a mixed infection, a woman of more than 60 years of age, on whom two operations have been performed in the last three years, has still a sinus from which a very little drainage comes, but she is otherwise symptomless.

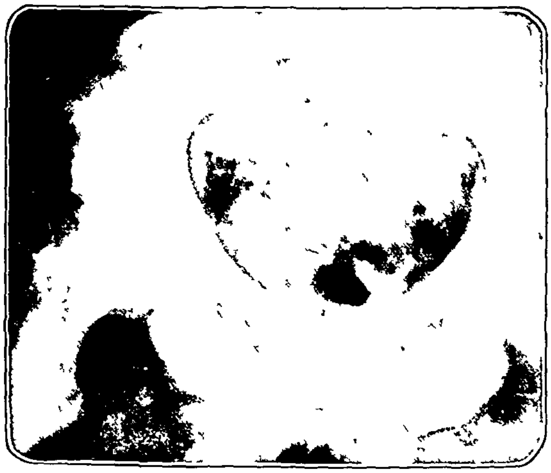

Fig 2 (Case 4).—Condition similar to that in Case 1 following a virulent throat infection and having the clinical symptoms, at the time, of an acute osteomyelitis.

Case 1.—A girl, a sophomore at Wellesley College, seen, Nov. 21, 1922, had always been well except for a serious illness in 1914, when she was thought to have had hip joint disease and was in bed for three months with traction and spent several more months in convalescence. However, she entirely recovered functionally, as well as symptomatically, from this illness. When she returned to college in the fall of 1922, she complained to the hygiene department that her back on the right side, low down, was lame and sore, and she thought she felt some difference in the two sides on examination. Nothing was discovered by the nurse in the department, and she was assured that she was all right. Symptoms persisted, however, and November 20, she consulted Dr. Raymond, the college physician, who referred her to me. She had no limitation in spinal motions, but a swelling was present to the right of the median line, and not far from the posterior superior spine. It was quite tender to touch, and was evidently caused by some subcutaneous swelling which did not fluctuate; she had had symptoms that suggested inflammatory disturbances in this locality, though they seemed to have subsided permanently. The roentgen ray showed a sacralization of the fifth lumbar vertebra on both sides, more marked on the right, and complete fusion of the sacro-iliac joint on this side. It would appear that this condition in the sacro-iliac joint was really caused by the disturbance that she had in 1914; that it was not hip disease at that time, but was merely the development of an acute arthritis or possibly of an osteitis or osteomyelitis close up to the line of the sacro-iliac articulation on the right side. In view of the uncertainty as to diagnosis, it seemed best to explore this, and she entered the Newton Hospital, where an incision was made around the swelling noted above, where a hard, gristly, and in spots more or less cystic tissue having some fibrous connections with the underlying fascia in this locality was dissected out. This extended quite well up toward the spine, as high as possibly the second lumbar vertebra. The cystic openings in the tissue contained what might have been organized blood clot or hemorrhagic material, the result of oozing from blood vessels in the denser tissue. The patient made a good recovery and healing was complete with the exception of a small point kept open at the site of a wick, which was put in to drain off any possible hematoma. From this opening there were two or three quite abundant discharges of serous fluid, slightly blood tinged. Where this came from was not possible to determine.

Microscopic examination of a mass of firm tissue from the right sacro-iliac region, with small foci of fat and at one point a rounded mass of clot, showed that the specimen was made up of fibrous connective tissue and fat. In addition to old fibrous connective tissue occurred large masses of what was evidently old granulation tissue with a large amount of hyaline, intracellular substance, still rather vascular, also showing perivascular collections of lymphoid cells. Throughout this tissue were large focal collections of lymphoid cells as well as marked, flattened cells suggesting synovial membrane. Beneath this was a region of diffuse hemorrhage. Microscopic examination of sections, including the clot described grossly, showed a similar picture except that here hemorrhage was much more diffuse and had spread through tissue in all directions, together with large numbers of polymorphonuclear leukocytes.

There was no evidence of new growth or tuberculosis. The diagnosis was chronic and acute inflammatory disturbance.

Roentgen-ray examination of the lower lumbar spine and sacro-iliac joint showed a congenital malformation of the fifth lumbar vertebra and sacrum, with sacralization of the fifth lumbar and obliteration of the right sacro-iliac joint.

Dr. George M. Sabin, who treated the patient at the acute period of the primary attack in 1913-1914, said in a letter to me that she was taken with acute pain in the hip, unceasing in severity, and with ascending temperature. At the time she had infected tonsils from which streptococci in pure culture were obtained. As all symptoms seemed to be referrable to the hip and as she was made perfectly comfortable by extension, Dr. Sabin made a diagnosis of acute infectious arthritis. Dr. F. H. Albee of New York a few days later saw her in consultation. He made a diagnosis, without any reservation, of acute infectious arthritis, probably of streptococcic origin, and advised continuation of the extension, already applied. The case progressed normally and the patient finally was up and about and in due time resumed her normal life. Dr. Sabin also said that he thought the patient's condition dated back to a fall on the gymnasium floor while she was at the Russell Sage School in Troy. A letter from Dr. Albee, who saw the patient at her home in consultation some years ago, said that at that time she was suffering quite severely from an acute infection, and that it was not very clear just where the focus had originated.

This patient was very sick for several weeks, delirious from high fever and in great pain. Traction and prolonged bed treatment resulted in bringing her through the acute phase of her trouble, but she was six months in getting back to where she was before the trouble came on. The roentgen ray showed that she had a focus of osteomyelitis in the ilium so close to the line of the sacro-iliac joint that on that side the joint is pretty well obliterated. The cavity in the bone has filled in, but the pathologic material, removed five years after the inflammation occurred, evidently escaped from this focus and slowly worked its way out to the surface just beside the posterior inferior spine of the ilium. It had a good deal the appearance of Swiss cheese, the holes of which had been filled with chilli sauce. In consistency it was more gristly than the material I have obtained from cavities in bone where osteitis fibrosa was undoubtedly the diagnosis, but I am convinced that it represented a mass of inflammatory material extruded from the cavity in the ilium, which had been rendered innocuous, and was trying to eliminate itself from the body. The long continuance of the serous discharge that came out through a very small opening over a period of several months without any suppuration or alteration in its character was not unlike the fluid I have not infrequently seen in bone cysts, and I am inclined now to believe that in the process of repair the abscess cavity had been converted into a cyst, and that the contents of the cyst, both fluid and solid, were ultimately evacuated and the cyst became filled in with new bone. Though the evidence is not complete, nevertheless, I believe this case furnishes a picture of the various stages of an osteomyelitic focus, caused by a streptococcic infection, from start to finish, when the focus was so located that the infection was pretty well bottled up and Nature, being unable to get a vent for the pus, had to handle the situation in an unusual way.

The changes characteristic of osteitis fibrosa seem to represent the end-result in the conversion of a mass of infective detritus into an innocuous residue which can be handled as a foreign body, comparable to the claim of the notorious quack called in consultation on a puzzling case, who informed the anxiously waiting family that he did not know what the matter with the patient was, but he could "throw her into fits and he was hell on fits."

Case 2.—A telephone operator, aged 23, seen, Sept. 24, 1923, fell off a tall stool, sitting down heavily, more than a year before. Not much but the immediate discomforts of the fall troubled her at the time, but in the course of three or four months she began to have considerable pain in the left sacro-iliac region, which at last became so pronounced that she was forced to quit work for six months. In the interval the symptoms largely disappeared, only to recur as soon as she returned to work, and they became more and more aggravated during the past summer. She then consulted her physician in North Attleboro, who discovered a swelling over the left sacro-iliac region and brought her in for consultation. This swelling was fluctuant to some extent and very tender, and strongly suggested the presence of an inflammatory disturbance in that locality. This was confirmed by a roentgenogram, which showed a destructive, osseous focus at the bottom of the left sacro-iliac synchondrosis.

Under ether at the Attleboro Hospital, about two weeks later, this was cut down on and the abscess drained, and a cavity in the sacrum and ilium about the size of a pigeon's egg was cleaned out.

The patient had an arrested case of pulmonary tuberculosis. She never got about after the operation. The incision never closed permanently, and after several months she slowly began to develop evidences of pulmonary disease, from which she died about a year and a half after the operation.

This young woman had as definite a relationship between the reception of a severe trauma to the region in which, about two months later, she developed a tuberculous osteomyelitis as one often meets. She sat at her work on a high revolving stool. She slid off and sat heavily down on the office floor without the intervention of anything to break the fall. The immediate effect was negligible. As a young girl she had been under treatment for pulmonary tuberculosis, but the disease had been regarded as arrested for a number of years. Cessation from work gave her the impression that the trouble had disappeared, but resumption of it brought back all the old symptoms and, in addition, objective evidence of an abscess near the posterior superior spine and the roentgen-ray appearances of a destructive lesion in the ilium and sacrum low down on the line of juncturė of the secrum with the ilium. There was a carious mass of bone in this locality, which was curetted. There was no sequestrum. In this case, therefore, trauma and preexisting tuberculosis, still lying dormant through several years, had the opportunity to act, and did so with a fatal termination.

Case 3.—A woman, aged 65, seen April 27, 1923, had been well until November, 1922, when she awoke one morning after having gone to bed as well as usual, with acute pain in the right hip. She could scarcely walk, was quite lame, and had a great deal of pain referred to the hip. About six or eight weeks later, a swelling appeared near the right posterior superior spine which Dr. Webb opened; a large quantity of pus escaped and a sinus had been discharging ever since. Her temperature had been in the neighborhood of 102 F. for some time. Roentgen-ray examination showed an osteomyelitic focus in the right ilium. An operation was performed, at which the sinus was followed down to the bone and a cavity the size of a pigeon's egg was found partly in the sacrum and partly in the right ilium. This was cleaned out and wiped out with iodin, a wick being left in. Convalescence was uneventful and the patient immediately picked up generally, recovered her color and gained weight. The sinus persisted, but at the end of about a year she began to have more pain and a more profuse discharge. A second operation was then done and a good sized sequestrum was removed from the old cavity. After thorough curetting, the cavity was wiped out with phenol (carbolic acid) and absolute alcohol. This operation was done in January, 1924. Since then she has regained her weight, gets about freely, has no discomfort, and feels well. There is a very slight weeping from the sinus.

This patient should be outside the conventional age limit for osteomyelitis or tuberculosis either, but started in with a typical clinical history of osteomyelitis: sudden onset, high temperature, great pain and, in a week or so, evidence of an abscess in the buttock, which was opened and drained. The roentgen ray revealed a cavity in the ilium. This was later exposed, its walls crushed in, and all the softened bone was removed by gouge and curet. At the time of the first operation sequestration had not started, and there was more bone rendered nonviable by the inflammation than appeared to be the case at operation. During the next few months this process was completed and a second operation removed the sequestrum, and now, though the sinus is still discharging, the patient suffers no discomfort and is in a normal state of health.

The following history was given by the patient himself, a physician, and is supplemented by the records of Dr. J. M. Gile of Hanover, N. H.

Case 4.—A physician, aged 39, had had the usual childhood diseases. He was operated on for a mastoid abscess at 12. He had bronchopneumonia in 1917 and influenza in 1918. He used tobacco moderately and was not a total abstainer, as to liquor, but was never intemperate. He had had neither gonorrhea or syphilis. His father died of cancer of the prostate in 1922; his mother was living and well, and one brother and one sister were living and none dead. The patient writes:

"On Sunday, Aug. 7, 1922, I was called to a patient and from her condition I thought it best to stay all night rather than be called in the night. In the morning I went home not feeling any better for my night's experience and thought at the time that I had contracted a cold, but I worked Monday and Tuesday as usual and Tuesday evening was out till about 11 o'clock. Tuesday morning I was up and went to my patients as usual, came back home about 11 o'clock in the morning and while waiting sat down on the step of the piazza for probably fifteen minutes. When I got up I felt a catch in my back which I was sure was lumbago. From that time till 5 p. m. the catch and pain grew steadily worse, and about 6:30 I went to bed and had about all that I could do to get upstairs. I was a little chilly and had started to cough a little but I do not think I had any fever. There is little I can add except that the pain and the catch grew worse and the temperature went up until Friday it was 104. I was delirious and had quite a cough. I can't remember much more about it except at occasional intervals. As I recall, I do not remember any sensitiveness or sore spots on my back or hip at this time. I think I was taken to the hospital on Wednesday, a week from the day I was taken ill, and was operated on the first time the next day. I will say further that I have practically no limitation of movement in my hip joint, and, except for being a little short on the endurance side, and that is fast improving, I am as well as ever."

Dr. John M. Gile supplied the following information from the hospital record:

"On admission to the hospital, the temperature was 103 F. The pain was most severe in the left lumbar region, but extended downward over the hip. There was definite fulness over the left lumbar region and marked tenderness with pressure, but the pain was most violent on any attempt to move. The white blood count was 10,000. The urine showed a slight trace of albumin. The roentgen ray showed definitely a deep shadow extending from the left kidney down to the crest of the ilium. A diagnosis of deep lumbar abscess was made. Incision was made through the left lumbar mass. No pus pocket was found, but the kidney fat was infiltrated with much grayish fluid. Drainage was inserted, and for the next five days symptoms were gradually relieved and the temperature dropped to normal. Following this, the temperature rose again and pain increased, now most marked in the gluteal region. Another roentgen-ray examination, September 6, gave appearance of disease of bone at the left sacro-iliac junction. A diagnosis of osteomyelitis, of the left sacro-iliac joint was made. Operation by Dr. Painter showed an area of bare bone along the line of the sacro-iliac junction. In chiseling into the bone, a small pocket of pus was evacuated. Recovery was slow and tedious, with complication of what appeared to be edema of the lungs, with a good deal of cough and dyspnea. The high temperature continued for several weeks. The patient was discharged from the hospital, October 14, much improved, but with the wound not entirely healed. Improvement, however, was steady, though slow. The patient did not begin to do any work until the following spring, but now appears to be in a condition of vigorous health. There is at present no limitation of motion, nor any disturbance with the hip. He is an active man and has hunted this fall, as usual."

This was a most interesting case resembling Case 1 in many respects. It was probably a streptococcic infection, though there is no laboratory proof of it. At the height of the acute infection, when the patient was too delirious to be of much aid to those who were seeking to find out the cause of his symptoms, there was more to point to a phlegmon in the loin than to any osseous lesion, and the possibility of a perinephritic abscess could not be brushed aside. A few days sufficed to bring out the localization of the focus in the bone by means of the roentgen ray, for when I saw him it was very difficult to make a satisfactory examination. The approach to the affected region was made by stripping everything back from the whole posterior portion of the iliac crest, so that the sacro-iliac notch was exposed, and then opening into the ilium as is done in the operation for fusing the sacro-iliac joint. Necrotic bone was removed, and drainage was established. Recovery has been complete, and I have rarely seen a more virile, active man than he was when he dropped into my office, two years after. I have observed few patients as sick as he seemed to be just before his operation.

COMMENT

We have been considering four instances of inflammation of the sacro-iliac region, three of them of considerable severity so far as the condition which ushered them in was concerned, and one a chronic condition. They have practically all of them been located in the same part of the ilium; i. e., close to, if not actually at the start, in this joint itself. The incidence of these inflammatory processes so close to the articulation lends some color to the query, Are they not more likely primarily joint infections rather than juxta-articular osteomyelitis? Cases 1 and 4, probably streptococcic infections, were definitely arthritic before the process was terminated, the sacro-iliac joint on the affected side showing positive evidence of having become fused. In one of these (Case 4), operation was performed during the height of the infection and vent given from the diseased area, healing following the usual lines of filling in by granulation tissue and ultimate cicatrization. In the other (Case 2), operation was not performed until nearly five years after the onset of the trouble, at which time a mass of inflammatory material having close resemblance to that characterizing osteitis fibrosa was removed from a point quite remote from the seat of the original lesion. Its removal was followed by a sinus discharging thin, clear fluid, not unlike synovial fluid, which was probably the liquid residuum from a cystic degeneration, of which the solid material described above was the solid residuum. This method of disposal of inflammatory exudates is one not very commonly employed by Nature, but her versatility is shown here as in her treatment of the arborescent lipomas that are occasionally encountered in knee joints. These are undoubtedly caused by a low grade infection of the synovial membrane, resulting in extensive proliferation of the villi without erosive lesions of the synovia. The natural history of these capsular changes is complete absorption of infiltration, and thinning of the capsule to its original and normal thickness. This is apparently accomplished through a fatty degeneration of the villi from tip to base, accompanied by absorption of the fat, virtually a metaplasia. In only one of these patients has there been any indication of sequestration. It is evident that it is desirable to favor the escape of the products of inflammation of this sort from any locality, for apparently fusion of the sacro-iliac articulation is likely to be the result. How significant this may be, except possibly in women, we are not now in a position to appraise. Certainly, extension of the lesion throughout an innominate bone provides a serious situation with which to deal: multiple sinuses, extension to other bones and all the ill effects of chronic suppuration for which von Bergman's suggestion of subperiosteal resection of the innominate furnishes the only possibility of cure. My experience with one case, in an adult, in which this resection was performed, was enough to convince me that, like the marriage contract, it is not to be entered into "lightly or unadvisedly."

I am inclining to the belief that true osteomyelitis of the innominate bone is a rarer condition even than it has been thought, at least in the adult, and particularly in the iliac bones, and that quite a few patients who seem to have indications of this disease are really suffering primarily from an arthritis in the sacro-iliac joint, either tuberculous or toxic, with a certain amount of extension into adjoining osseous tissue after the thin cartilage covering this articulation has been eroded.

520 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. M. S. HENDERSON, Rochester, Minn.: Dr. Painter brought out the point that he was not exactly sure himself in these cases as to whether the lesion might not have been primary in the sacro-iliac joint. My conception of this subject when I saw the title of the paper, "Osteomyelitis of the Innominate Bone," was an osteomyelitis involving the wing of the iliac bone. The exact type of infection in Dr. Painter's cases is not determined, though the fact that one patient later died of tuberculosis is significant. The type of osteomyelitis, as I say, of the iliac bone that I had in mind was that in which the body of the bone was involved, and there was drainage and in some cases there were sequestrums. Our files in the Mayo Clinic, from 1910 to 1925, contained only twenty-eight cases of osteomyelitis of the ilium, three of the ischium, and seven of the pubic bone. I can remember some of these cases in which the drainage was situated over the body of the iliac bone, and we removed sequestrums and even then they failed to heal, because the condition had been so chronic, there was so much fibrosis of the muscle, and the bone itself had been perforated, that the muscles refused to fall in, and it was only by going in and cleaning out all this fibrous tissue, getting down to muscle and even removing a good deal more of bone, that we were able to get healing. The condition is a rare one, and it is only by bringing up and discussing these rare conditions that we can crystallize our idea on them.

DR. FENWICK BEEKMAN, New York: Dr. Painter's paper is of particular interest to me, as our findings at Bellevue Hospital in the Children's Surgical Division have been quite different from his. We have in the last four years seen three cases of acute hematogenous myelitis of the innominate bone in children. These formed about 6 per cent. of our cases of acute hematogenous osteomyelitis. All these children were admitted to the hospital in the acute stage, before sinus formation. All were streptococcus infections. Two were in the ischium and one in the ilium. The ischial infections had pointed into the soft parts in the adductor muscle planes, and the ilium infection was a bone abscess in the crest, a metastatic abscess. The ischium cases sequestrated. They had a long, stormy course, and it was several years before they were finally cured. I feel that all these cases were primarily osseous infections, rather than infections from joints. Dr. Painter's paper brings up a question that is of great interest from the etiologic standpoint. We know that most osteomyelitis usually localizes in the end of the bones which have the greatest activity in growth. And as there is not as much activity in the growth of the innominate bone as there is in the femur and in the tibia, this may account for the infrequency of infection of the latter bone. I believe that most cases of osteomyelitis are predisposed by the arrangement of the blood vessels in the metaphysis, and that these blood vessels of long bones are arranged in such form that they are peculiarly susceptible to the lodgment of infection, which is not the case in the innominate bone.

Dr. Z. B. Adams, Boston: I recently saw a case of osteomyelitis of the ilium, presumably starting at the sacro-iliac joint, because the sacro-iliac joint and the side of the sacrum had been eroded. The interesting thing about this case is that the symptoms began when the woman was 17 years old, and when I saw her she was 50. She had had eleven children, eight of them living. At times she had been laid up with this disease, which had extended from the region of the sacro-iliac joint forward to involve the ilium. There had been multiple sinuses, in the upper part of the thigh, the region of the posterior superior spines of the ilium, over the back of the sacrum, and also over the crest of the ilium, where she had had sequestration with bits of bone that had come out at times. This case shows what this disease will do and how long it may continue without doing any very great damage to the patient.

Dr. Charles F. Painter, Boston: When I was asked to present a paper here, I had these four cases in mind, and they presented themselves to me as osteomyelitis in a rather unusual form. I changed my point of view as I worked up the subject. I still think that pathologically they may be considered as belonging in the osteomyelitis group. They certainly raise questions which were brought out here in the discussion, and this was the main thing that I wanted to see brought out; viz., as to the pathology of conditions of this sort and the methods by which nature handles the problem, which is not the usual and conventional osteomyelitic problem. The cases would have been much more interesting if they could have been considered in their minute detail instead of in the rather sketchy way in which I presented them.

Clinical Notes, Suggestions and New Instruments

ABSCESS FOLLOWING THE INTRAMUSCULAR INJECTION OF BISMUTH METAL (NEOTREPOL)

Irwin C. Sutton, M.D., Hollywood, Calif.

Cysts and nodules are not uncommon following the deep intramuscular injection of the salts of heavy metals, but this is the first case so far as is known in which an injection of bismuth metal has produced an abscess.

This product was first prepared in France by Sazerac and Levaditi, who obtained bismuth metal in a fine state of division by the reduction of a bismuth salt. The bismuth is then held in suspension in a 10 per cent dilution of an isotonic solution. The therapeutic dose is from 0.15 to 0.20 Gm. of the drug, administered in a series of from ten to twelve injections, and is given twice a week.

REPORT OF CASE

History.—A married woman, aged 18, had been infected by her husband four weeks before examination. When seen, she had a rather large initial lesion on the left labium majus, and shotty inguinal glands. She was given an intravenous injection of sulpharsphenamine (from 0.3 to 0.4 Gm.) every other day for three injections, then one a week for five more. After her third intravenous injection she was given biweekly injections of neotrepol deep in the gluteal muscles, after the method of Stokes. Five of these were rather painful but provoked no masses or painful buttons of induration. After the sixth injection, however, she complained of a great deal of pain.

Physical Examination.—The patient was small and slightly underweight. In the right buttock was a tender, hot, red mass which resembled a large grapefruit. There were none of the cutaneous signs of syphilis, nor was there a marked glandular adenopathy. The mucous membranes were normal. The temperature was slightly elevated (99.6 F.).

Treatment and Subsequent Course.—The patient was advised to take hot sitz baths twice daily and to apply hot applications to the buttock in the interim. Small doses of codeine were given for the pain. Twenty-four hours later, a fluctuating abscess had formed with a definite pointing. This was incised, and chocolate colored pus discharged. There were a few flecks of blackish material, resembling coal dust. The abscess drained freely for several days until it finally closed. A roentgen-ray examination at that time did not reveal any deposits of bismuth in the muscles.

The contents of several ampules from the same batch of drug were found to be negative by anaerobic and aerobic cultures of broth and agar.

916 Taft Building.

BRONCHIAL ASTHMA DUE TO HACKBERRY (CELTIS) POLLEN

I. S. Kahn, M.D., San Antonio, Texas

I have not been able to find in the literature any other case of asthma with this particular botanic causation.

Mrs. B., aged 45, seen, March 9, 1925, for many years had had severe bronchial asthma lasting daily and almost continuously for several weeks from the middle of March to the end of April, with complete freedom from allergic symptoms at all other seasons of the year. She had lived in the same neighborhood in San Antonio for many years and had always been at home at this season.

The sharply defined seasonal incidence and cessation of the asthma suggested a tree as the only known air-borne pollination possibility coinciding with the history. Intradermal tests were positive to the pollens of the grasses and ragweeds, obviously impossible factors in her case. Of the trees pollinating at this season in the locality, tests were negative to the various oak pollens, pecan, ash, cottonwood, box elder and mountain cedar. Tests were positive to mesquite and willow. Of these, willow growth in this community is very scarce and is absent in the vicinity of the patient's residence, while mesquite is not an air-borne pollen. The patient herself suspected hackberry, of which there was a heavy growth around her home. The pollination season of this tree coincides with the patient's asthmatic symptoms, and pollen plates set out at her home were loaded with this pollen to almost the complete exclusion of other pollens. An intradermal test with 0.01 cc. of a 2 per cent extract of this pollen (0.02 Gm. to 1 cc. of Coca's solution and glycerin) produced a characteristic wheal from 3 to 3.5 cm. in diameter with pseudopodia, and with induration and erythema extending from the elbow to the shoulder lasting several days. A sharp attack of asthma did not clear for two days.

The patient's asthma cleared up as usual late in April, without treatment, and though living in the same environment up to this date, Dec. 10, 1925, she has continued perfectly clear, passing through both grass and ragweed pollination seasons without the slightest hay-fever or asthmatic symptoms.

Moore Building.

READING AND WRITING FOR THE RECUMBENT*

John Alexander, M.D., Saranac Lake, N. Y.

Fatigue and eyestrain that result from writing by hand on a board held against the chest, or from reading from a book held in the hand, are not only harmful in themselves but may seriously impair the morale of patients with chronic disease who must lie flat in bed for a long time. Provision of facilities for reading and writing with ease may well dispel much of the dread with which most patients face prolonged confinement in bed, and may furnish many possibilities for occupational therapy and contentment. On extensive inquiry I find that the devices described in this article are unknown to the medical profession at large and therefore justify this brief notice.

Typewriting may be as easily performed in the recumbent position as when sitting. A bedside table that is adjustable as to height and tilt (such as may be had at hospital supply stores) is put across the patient so that its lower edge rests lightly on a small pillow or pad placed on the patient's upper abdomen or on a plaster body-cast as pictured. A portable typewriter (the new Corona or the Underwood lend themselves to this use, but not the Remington, Hammond or old Corona) is then put on the table and caught in the wire rack that is incorporated in the table's edge. With his elbows resting comfortably on the bed, the patient may reach the keyboard with his fingers. Without any especial adjustment of the machine, writing proceeds with the usual speed. Although the keys and writing point are perfectly visible, it is an obvious advantage for the patient to learn the touch system and so to eliminate the need for watching the machine. In fact, teaching oneself the touch system is one of the pleasantest forms of occupational therapy.

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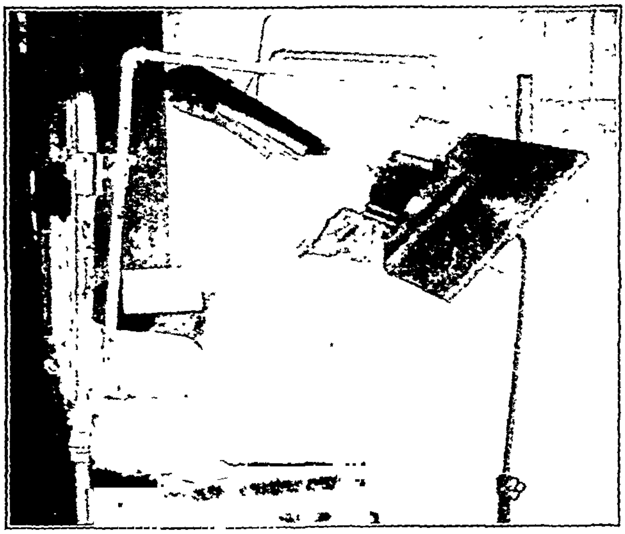
* From the Department of Surgery, University of Michigan Medical School.

The special bookrest[1] shown in the illustration has been designed by Miss Dorothy Forbes of Boston and will firmly hold large or small books or magazines in almost any position. It may be raised or lowered after the loosening of a single wingbolt. The reading board is joined to the bracket by means of a ball and socket joint, which may easily be loosened or tightened by an accessible lever. This joint permits the book to be held in the proper reading position for a patient who is sitting upright or for one who is lying flat or in any intermediate position, or even on his side The universal adjustability of the reading board makes it easy to keep the page at exactly the proper angle with the eyes and so to eliminate eyestrain. A simple arrangement for holding the book permits the leaves to be turned in an instant with one hand. The whole bookrest is attached to the bedpost by a felt-lined clamp and when not in use may be folded and swung to the side.



Special bookrest and typewriter arrangement for use of patients who must remain in a recumbent position.

28 Front Street.

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[1] Manufactured by Messrs. George Tiemann & Co., 107 East Twenty-Eighth Street, New York.

The Place of Psychology in Medicine.—Psychology needs to be taken into the texture of medical practice and not regarded as an extraneous aid. Its delicate processes, requiring as they do insight and sympathy, find encouragement and balance if they are as the warp to the woof of physical symptoms. Standing apart, psychologic practice may easily fail in acceptance and purpose and even produce antagonism. This is due in part to the outlook of patients and in part to the crudity of many of its exponents. Broadly speaking, patients regard disturbances of mind as things they can, and disturbances of body as things they cannot, avoid. Although neurosis is equally if not more prone to attack the higher type of mind, its diagnosis is apt, in spite of every explanation, to debase the patient and prejudice cure.—Lord Dawson of Penn: Widening Range of Medicine, *Lancet*, Jan. 2, 1926.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 277)

V. PAINTS AND PENCILS

Paints or pigments are liquids, usually containing highly active ingredients, intended to be painted on the surface. They generally are solutions or suspensions in water, volatile organic solvents, glycerin, or oil. Glycerin is the best vehicle for applications to mucous membranes or raw surfaces, when more prolonged action is desired. For application to the intact skin, volatile organic solvents, such as alcohol, ether or chloroform, are generally preferred. When prolonged action on the skin is aimed at, a substance that leaves a film is added.

One of the chief uses of pigments is for the production of hyperemia. They are also sometimes used as analgesics in neuralgia. Occasionally they are employed for effect on diseased skin, rarely for diadermic action.

The difference between the indications for counterirritation by means of pigments and of liniments is largely equivalent to the contraindications and indications for massage, and centers chiefly around the fact that the foci of infection must not be rubbed, for fear of disseminating the infection. For such areas, pigments are to be preferred. Tincture of iodine is a good example of a pigment used for this purpose.

When the surface is diseased or ulcerated, massage is also contraindicated; then pigment-like applications are employed. Vulnerary balsams to stimulate healing of ulcers and raw surfaces are of this nature; and the compound tincture of benzoin is an example of such an application. It is similar in composition to the friar's balsam, a healing balsam used by the friars of the middle ages, and justly celebrated in preantiseptic days. Probably better than friar's balsam, because in addition to antiseptic and stimulant action it keeps dressings from sticking, is balsam of Peru, applied full strength or more or less diluted with castor oil, according to the sensitiveness of the surface.

An example of a stimulating pigment for use in chronic skin disease is a mixture of pine tar, or—because it is more elegant—of oil of cade, in varying proportions with alcohol, e. g., 50 per cent each.

An analgesic pigment for the treatment of neuralgia is exemplified by a solution of 4 per cent each of menthol and volatile oil of mustard in alcohol.

Medicated pencils are cylindric medicated bodies or sticks of wood tipped with medicament—as matches are with igniting material—intended for the direct application of medicinal agents to the skin. An example of these is molded silver nitrate, also known as lunar caustic. The National Formulary describes salicylic acid pencils, which are used in dermatologic practice. There are now on the market match shaped applicators for iodine, silver nitrate, copper sulphate and alum; these have a good deal to recommend them on the score of portability, cleanliness and convenience of application.

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* This is the fifth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

VI. SALVES

Under the heading of salves will be discussed those topical preparations that are characterized by semisolid consistency, so as to be readily spread without previous melting. These characteristics are shared by ointments, pastes and cerates, which differ among themselves in the following manner:

An ointment is a fatty preparation of butter-like consistency, easily applicable to the skin by inunction and liquefying gradually at the temperature of the body.

Pastes are jellies or doughlike applications, either not fatty—containing glycerin with starch, glycerogelatin or some other hydrophil base—or else fatty and containing as much as 50 per cent of powder. The pastes containing powder differ from ointments by having a very slight degree of drying action due to adsorption or capilliarity. They yield medicaments incorporated with them somewhat less readily to absorption than do ointments, and have a more superficial action, but they give better protection. Thus, pastes are especially indicated when it is intended that a therapeutic effect shall be exerted chiefly on diseased epithelium (epidermic action); while in conditions in which the deeper layers of skin are infiltrated or otherwise involved (for endermic action), true ointments should be preferred. These should also be chosen when absorption into the system (diadermic action) is desired.

A cerate is a fatty preparation resembling an ointment, but firmer and of higher melting point (above 104 F.). It is of such consistency that it can be spread without previous melting on muslin or other backing, and yet it will not melt or run through the dressing when applied to the skin. Cerates are used chiefly as protective applications for inflamed or raw surfaces. Their importance is derived largely from the fact that they form a good dressing for ulcers, chiefly by keeping dressings from sticking to the raw surface, an occurrence the importance of preventing which may be appreciated when it is realized that each time a dressing that sticks is pulled off, not only does the patient suffer unnecessary pain, but healing is also disturbed.

Ointments, pastes and cerates constitute an important class of dermatologic preparations, chiefly because a fat or physically similar substance is most suitable for the softening, protecting and soothing of a fatty surface, such as the skin. Nature has provided our skin, exposed as it is to the drying and hardening effects of the air, with an emollient in the fatty secretion of the sebaceous glands; and, whenever this natural fat is deficient, the artificial application of fat is of restorative value. Hence, fats are used extensively in the treatment of skin diseases, especially those of a dry, scaly type. They are also useful to protect healthy skin against excoriation by irritant discharges, to prevent chapping of a delicate skin on exposure to cold winds, and to cover ulcers. Fats generally form the best vehicle for application of medicaments, when we desire penetration of the agent into or absorption from the skin.

These fatty preparations are unsuited, however, for wet surfaces. Whenever an ointment does not stick to the place of application, it not only does no good but is liable to do harm by causing the retention of secretion, which forms a culture medium and thus favors the proliferation of micro-organisms and the consequent irritation of the surface by their poisonous products. In conditions that border on the prohibitive type, pastes, by reason of their slight drying action, may still be useful. When even a paste dressing is found to have been lifted off the surface by secretion, this should be taken as an indication for a different kind of application. So-called cooling salves, being mixtures of fat and water, are more likely to stick to slightly moist surfaces. By reason of the escape of some of the water contained in them and the consequent rendering latent of heat, these preparations have a cooling effect, which antagonizes the feeling of heat, burning and itching of acute dermatoses.

Salves must be perfectly smooth; otherwise they are liable to irritate the skin. Crystalline substances, which by their sharp points and edges might cause multiple minute injuries, just as would powdered glass, should be dissolved in the smallest possible amount of solvent before being incorporated in the ointment. When the active agent is soluble in fat, the ointment should be prepared by fusion; or else the agents should be first dissolved in a small quantity of warm oil, such as castor oil or olive oil, before being incorporated with the ointment vehicle. When the active ingredient is insoluble in fat but is soluble in water, alcohol or glycerin, the smallest quantity of the solvent should be used, the solution being thoroughly incorporated with the ointment vehicle. When the ingredients are insoluble, they must be in a very fine state of subdivision and mixed with the vehicle by thorough rubbing with a spatula on a glass or porcelain slab or in a mortar.

However, these purely pharmaceutic considerations will have to be modified in accordance with the effect desired. When soothing action is the most important point of consideration, they should by all means be complied with. Owing to the physical fact that a substance will not exchange a good solvent for a poor solvent, the activity of the dissolved substance may be greatly reduced or even annihilated.

The total quantity of a salve to be prescribed depends on the time and place of application; thus, eye salves are to be prescribed in quantities of 5 Gm., certainly not exceeding 15 Gm., while other ointments should be given in larger quantities. As comparatively few ointments are absolutely permanent, it is usually not desirable to order more than can be used up in a fairly short time. It may be well to have an idea as to the quantity that will probably be required for various parts of the body. One may estimate that there may be required: for the hand, from 20 to 30 Gm.; for the arm, 50 Gm.; for the leg, from 80 to 100 Gm.; for the head, from 40 to 50 Gm.; for the face, from 20 to 30 Gm.; for the whole body, from 150 to 200 Gm.

For application under a gauze bandage, almost double the quantity will be needed. Pastes are more economical than ointments.

Ointments are dispensed in ointment boxes or in collapsible tubes; it is not necessary to specify which in the prescription, unless the collapsible tube is particularly desired for applications of ointment to the eyelids, the rectum or the urethra.

The directions to the patient should express the quantity (size of millet seed, pea, hazelnut, walnut) or the thickness of the application (one-twelfth or one-sixteenth inch), whether to be rubbed on gently or vigorously, or to be spread on lint, flannel or gauze.

When a surface action is desired, gentle inunction is all that is required. When penetration is aimed at, more or less vigorous friction should be employed. After the ointment has been applied, something generally needs to be done to keep it in place. For pastes, talcum powder or, on exposed surfaces, face powder, may be all that is required; for cerates, gauze; but for ointments, some nonabsorbent material, such as oiled silk or rubber tissue, is necessary; otherwise the covering may absorb more ointment than the skin. To keep an ointment dressing in place, a few strips of adhesive plaster or a roller bandage generally suffice. For the scalp, a rubber bathing cap; for the scrotum, a suspensory bandage; for the hands, cotton or rubber gloves, and for the feet, stockings, are convenient means of retention.

Removal of the salve remnants may be effected by cold cream, oil or gasoline. Frequent or energetic removal is generally not advisable, as it may prove irritative. In general, all that is required is to apply fresh ointment when the covering layer has been shed or rubbed off. Washing with water or soap and water must be prohibited in all acute dermatoses.

SALVE VEHICLES

The chief salve vehicles are petrolatum and wool fat. Lard, by reason of its tendency to rancidity, has largely fallen into disuse.

The most important ointment vehicle is, no doubt, petrolatum. It consists of a mixture of olifatic hydrocarbons obtained from petroleum by distilling off the more volatile products, by separating the substances of higher melting points (paraffin, etc.) by chilling, and by subsequent purification. When the word petrolatum is used without modification, the yellow substance of butter-like consistency is referred to. By decolorizing, a white translucent body is obtained, which is known as white petrolatum. When liquid petrolatum is desired, we must specify it as such. Petrolatum is insoluble in water and alcohol, but is soluble in ether, chloroform, benzine, and in most of the fixed or volatile oils. It is the best vehicle for ointments or pastes, particularly when surface action is desired, chiefly because it cannot become rancid, and because, owing to its chemical indifference, it can be mixed with nearly all kinds of medicaments, even with oxidizing and reducing agents. Though it is believed that most agents penetrate the skin less readily when mixed with petrolatum than when applied with wool fat or lard, it has been shown that volatile substances, such as mercury or methyl salicylate, are absorbed from it quite as well as from other ointment bases. Its chief disadvantage lies in its very slight capacity for absorbing water or alcohol. Hence, when fluid is to be incorporated in an ointment, wool fat or wax mixtures are preferred.

When cerate-like consistency is aimed at, as for the dressing of burns, ulcers and itching surfaces, paraffin may be added. Boric acid (20 per cent) may be incorporated in such an application, but the necessity for it is doubtful. Paraffin, 30 Gm., and petrolatum, 60 Gm., is a useful application for burns; it is spread on gauze, the usual precautions of asepsis being employed. In hot climates more paraffin may be added to make the melting point higher. This mixture, by reason of its permanence, is probably superior to the official cerate, also known as simple cerate, which is benzoinated lard, stiffened by the addition of 30 per cent of white wax. The resin (35 per cent) present in resin cerate makes it somewhat irritative and suitable as a stimulating application to rather chronic ulcers.

Wool fat is available in two forms. The anhydrous wool fat (anhydrous lanolin), which is the purified fat of sheep's wool, a light yellowish, tenacious, unctuous mass with a slight, somewhat unpleasant odor. It is insoluble in water, but is mixable with its own weight of water or glycerin without losing its ointment-like consistency. It is sparingly soluble in alcohol and absorbs alcohol to only a slight degree (about 5 per cent). Wool fat is freely soluble in ether and chloroform. It does not become rancid, unless kept for a very long time. Hydrous wool fat (lanolin) contains from 25 to 30 per cent of water.

Wool fat is particularly valuable as an ointment vehicle for substances, aqueous solutions of which are to be incorporated, and for cooling salves as well. The anhydrous wool fat is used only when the largest possible amount of aqueous fluid is to be incorporated; otherwise it is too tenacious. Even hydrous wool fat is too tenacious, and from one half to one fifth of petrolatum should be added to improve its consistency. Wool fat, on the other hand, is useful to make ointments that are too soft, more tenacious.

These may be considered suitable proportions for a cooling salve: aqueous fluid, 40 cc.; wool fat, 40 Gm.; petrolatum, 20 Gm.

Lard penetrates well and softens at the temperature of the body without becoming fluid. It is important that all lard for medicinal purposes be free from salt and devoid of rancidity. The chief disadvantage of lard is its tendency to become rancid, antagonized to a certain extent by using benzoinated lard, which is lard impregnated with the fat-soluble principles of benzoin by digestion of the benzoin with melted lard. Unfortunately, even this addition does not prevent rancidity; but it may cover up the early manifestations of this change. When fat has become rancid, it is irritating instead of soothing, and may do more harm than good when used on irritated surfaces. As the early stages of rancidity may not be noticeable to the senses or may be covered by benzoination or other perfuming, it is well to know a simple test for rancidity. One mixes the fat with an aqueous solution of potassium iodide. Rapidly occurring discoloration due to liberation of iodine indicates rancidity; its degree can be roughly estimated by the rapidity and degree of this change as compared in a test with a fat, known to be fresh, as a control. Dog's fat, bear's fat, goose grease and other animal fats, notwithstanding the ancient and still existing popular prejudice in their favor, do not present any advantages over lard.

Petrolatum, usually with a stiffening addition of 5 per cent of yellow wax, 20 per cent of wool fat, or 15 per cent of paraffin, has displaced benzoinated lard in most of the official ointments, with the notable exception of stronger mercurial ointment, which is intended for diadermic action, i. e., action after absorption. In it benzoinated lard (stiffened by the addition of an equal amount of suet) has been retained, because it is believed to yield material incorporated with it more readily to absorption. This ointment contains 50 per cent of mercury. Mild mercurial ointment, on the other hand, which is of 30 per cent strength and which is supplied whenever blue ointment is called for, contains petrolatum in addition as a part of the diluent, as it is chiefly used for the extermination of pubic lice, and epidermic rather than diadermic action is aimed at.

(To be continued)

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SATURDAY, JANUARY 30, 1926

CRYSTALLINE INSULIN—ANOTHER CHEMICAL TRIUMPH

One of the greatest fields of effort for the constructive chemist is the isolation, study and preparation of pure principles of the organs of internal secretion. An understanding of the action of the important glands in the body is never adequate until the chemistry of the active principle (or principles) is known. Although Schäfer and Oliver, Szymonowicz and Cybulski had noted the presence of a vasoconstrictor principle in the suprarenal glands, the fuller appreciation of the secretion came after Abel had succeeded in isolating epinephrine. Subsequently, its chemical structure was determined and the product prepared synthetically. The science of therapeutics has been benefited immensely by the availability of pure solutions of definite composition.

The researches of E. C. Kendall leading to the isolation and identification of thyroxin have given new insight into the action of the thyroid; like epinephrine, the pure substance is at the disposal of the physician. The artificial preparation of thyroxin is only a question of time and effort, and "one more outpost of the bulwarks of life will thus have been conquered by the chemist."[1] The extract from the pituitary gland is still the subject of attack; steady progress leading to separation and isolation of the pure substance is attested by the reports of Abel and others who have obtained extremely active solutions. The attack on the ovary, particularly the work of Doisy, lends hope that, even for this gland, chemistry will throw much light on its functions as a secretory organ. Following the fundamental researches of others, Collip has succeeded in preparing a solution from the parathyroid containing some substances of marked effect on calcium metabolism. A close parallel to the history of epinephrine is that of insulin. The far-reaching publications of Banting, Best and their co-workers on the preparation and use of active extracts of the pancreas are still fresh in our minds. Pharmaceutic houses have been constantly improving the product; yet none has been unconscious of the presence of undesirable impurities and particularly of the fact that the methods of standardization at best indicate only approximately the relatively minute amount of that chemical which is the ultimate goal.

In a significant address—the sixth annual Pasteur lecture—recently given before the Chicago Institute of Medicine, John J. Abel made public announcement[2] that he had *obtained a crystalline form of insulin* and exhibited a small specimen of the product. Lantern slide pictures showed the crystals to be rhombohedral, but other data were not presented at that time. The chemical and medical world will await with great interest further developments, particularly the proof of the identification and chemical constitution of the product. The crystallization of the pure principle "insulin," or a compound of it, may well be considered an outstanding accomplishment in the life of a man already distinguished by his conquests in biochemistry. If following this a better method of standardization is worked out, and the product can be prepared synthetically it will have contributed in great measure to the better understanding of modern physiology, to the increased value of medicine, and to a more enjoyable and prolonged life of the patient with diabetes.

THE CHEMICAL REGULATION OF RESPIRATION

Breathing is an involuntary act. Though some of the muscles employed in respiration can be called into action by a direct effort of the will, human beings habitually breathe without intervention of voluntary processes; indeed, respiration can proceed, as is well appreciated, in the absence of consciousness and also after removal of the higher cerebral centers. Accordingly, the factors that determine the rate and extent of respiration have long been sought in the organism itself. The discovery of the respiratory center, an important nervous station from which the long known mechanical aspects of breathing are regulated, paved the way for the modern study of the subject. In the earlier period, shortage of oxygen was looked on as the foremost provocative of augmented respiration. On superficial examination, there is much to commend this view. When the external oxygen supply is reduced, vigorous respiratory efforts are soon initiated, as one may observe in the severe dyspnea of oxygen want.

Twenty years ago, Haldane and Priestly, in England, demonstrated the extreme sensitiveness of the respiratory center to changes in the tension of the alveolar carbon dioxide. As a consequence it was soon assumed that the regulation of respiration, meaning by that the amount of ventilation per unit of time, or the total volume of air sent in and out of the lungs, is affected by the carbon dioxide tension of the arterial blood, which is the same as that of the alveolar air of the lungs. The reaction is so sensitive that under extreme conditions the concentration of carbon dioxide in the alveolar air is actually kept nearly constant. Thus, in muscular exercise when there is a large output of carbon dioxide into the blood, the regulatory adjustment functions promptly through augmented breathing. The question has arisen as to whether the carbon dioxide acts directly or in virtue of its effect in increasing the acidity or hydrogen ion concentration of the blood. A recent reviewer[1] of the extensive literature on the subject has pointed to the present generally accepted belief that the hydrogen ions of the arterial blood stimulate the respiratory center, thereby controlling its activity, and that pulmonary ventilation is so regulated as to maintain a constant hydrogen ion concentration of the arterial blood. This view rests primarily on the work of Haldane and his associates, of Winterstein and of Hasselbalch. The conception has found widespread acceptance in the interpretations of the pathologic manifestations of respiration. Thus, Means,[2] in his review of dyspnea, states that "ordinarily carbon dioxide plays the major rôle in regulating the respiration, and the rate of ventilation is adjusted to the carbon dioxide requirements. For purposes of oxygen absorption alone, the ventilation is ordinarily in excess." He believes that "sufficient pulmonary ventilation must be supplied to remove the carbon dioxide produced by metabolism, but at the same time its rate of removal must be so adjusted to its rate of addition to the blood that its tension will bear a nearly fixed ratio to the blood bicarbonate, this in order that the blood may be kept from more than slight alteration."

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[1] The Future Independence and Progress of American Medicine in the Age of Chemistry, Report of Special Committee, American Chemical Society.

[2] Abel, J. J.: Some Thoughts and Experiments in Relation to the Hormones, Pasteur lecture given before Chicago Institute of Medicine, Jan. 22, 1926.

We are indebted to Gesell among others for having pointed out numerous evidences of lack of correspondence between the activity of arterial and respiratory activity. Even granting that the acidity of the blood or of the center is the regulative stimulus, as he remarks, it would be exceedingly remarkable if the behavior of the center were not modified in other ways. Accordingly, Gesell has directed his attention to metabolic changes within the respiratory center itself, reaching the tentative conclusion that changes in the acidity of the latter constitute the primary chemical control of respiration. His latest contribution[3] stresses the importance of the production of lactic acid in the brain itself. The experimental tests demonstrate, first of all, a high normal lactic acid content in that organ. Lack of oxygen leads to increased cerebral lactic acid without indication of any intervening latent period between the anoxemia and the onset of acid accumulation. Gesell rejects the theory that carbon dioxide is the "normal" regulator of respiration, and that lack of oxygen is the "abnormal" stimulus operating only under conditions of stress. He believes that the new data support the view that lactic acid is an important regulator of respiration. This, Gesell adds, is tantamount to saying that oxygen regulates respiration indirectly by determining the amount and kind of acid formed within the respiratory center. Evidently, to quote Yandell Henderson, there still are many phenomena that require to be considered, explained and harmonized before the behavior of the hematorespiratory functions in health and disease can be regarded as solved. For the present, both the hydrogen ion concentration of the blood and the changes in the respiratory center itself furnish the chief items for critical discussion.

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[1] Gesell, R.: The Chemical Regulation of Respiration, Physiol. Rev. 5:551 (Oct.) 1925.

[2] Means, J. H.: Dyspnea, Medicine 3:309 (Aug.) 1924.

[3] McGinty, D. A., and Gesell, R.: On the Chemical Regulation of Respiration, II. A Quantitative Study of the Accumulation of Lactic Acid in the Isolated Brain During Anaerobic Conditions, and the Rôle of Lactic Acid as a Continuous Regulator of Respiration, Am. J. Physiol. 75:70 (Dec.) 1925.

THE PARATHYROID HORMONE—A WARNING

At present the preponderance of opinion with respect to the parathyroid structures makes them responsible for the elaboration of a hormone having to do normally with the regulation of calcium metabolism through a specific control of the concentration of the element in the circulating blood.[1] This view has been rendered highly plausible by the recent well substantiated demonstrations of the preparation of extracts from the parathyroid tissue that have the potency of raising the concentration of the circulating calcium. They are effective in replacement therapy after the otherwise fatal complete parathyroidectomy. Parathyroid tetany and a low level of blood calcium have long been recognized as coincident phenomena. Both can be respectively relieved and raised by administration of calcium salts; likewise by the use of preparations containing the parathyroid hormone.

As might be expected, such experimental studies in this field have promptly given an impetus to the discovery of possible clinical applications. Collip[2] has sounded the keynote by reminding us that calcium metabolism enters into many medical problems. An agent is now at hand, he adds, which influences profoundly the calcium metabolism. It must be recognized, however, that the parathyroid hormone is a most potent therapeutic agent and that its use may be attended with great danger unless due precautions are taken to avoid an overdose and the development of hypercalcemia. It may be that a condition of mild hypercalcemia would be of definite benefit in certain conditions. Only by careful clinical studies, however, will the ultimate merits or demerits of this hormone be determined.

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[1] The Parathyroid Hormone, editorial, J. A. M. A. 84:1499 (May 16) 1925; The Parathyroid Hormone—Retrospect and Prospect, ibid. 85:118 (July 11) 1925.

[2] Collip, J. B.: The Extraction of a Parathyroid Hormone Which Will Prevent or Control Parathyroid Tetany and Which Regulates the Level of Blood Calcium, J. Biol. Chem. 63:395 (March) 1925.

More recently, Collip's warning against any but the most careful and discriminating clinical use of parathyroid extract has been sounded anew by Greenwald and Gross[3] of the Harriman Research Laboratory at the Roosevelt Hospital, New York. It is their belief that the parathyroid hormone facilitates the solution of calcium phosphate. By what means this happens is not yet determined. In their tests on animals practically deprived of calcium in the food, the calcium content of the blood was nevertheless increased through the use of the parathyroid hormone. This, Greenwald and Gross remark, must have been at the expense of certain tissues. Since the increased excretion of calcium was regularly accompanied by an approximately equivalent increase in the excretion of phosphorus, it is not unreasonable to assume that both calcium and phosphorus were derived from bone, particularly since there seems to be no other tissue that could supply the large amounts lost. According to the New York biochemists, excess of parathyroid secretion leads to excessive solution of calcium phosphate from the bones and, possibly, other tissues, and to an increase in the concentration of both calcium and phosphate in the blood. The kidneys speedily remove the excess of the latter, so that the increase may be too slight to be detected by our present methods. The increase in the concentration of calcium is much more evident. Both substances are excreted in increased amounts and in approximately equivalent proportions. Hence the timely significance of the reminder that those who venture to use parathyroid extract clinically should clearly understand that the hypercalcemia it induces is not due to improved assimilation but is the cause of an increased loss of calcium. It is not to be used to promote calcium assimilation, for only the contrary result is to be anticipated.

DRIED HUMAN MILK

If it is true, as one reads so frequently in the discussions of human welfare, that the chances of a long and healthy life are immensely greater for the breast-fed baby than for the child who must be fed artificially,[4] the medical profession cannot disregard the challenge. Furthermore, if it is demonstrably certain that in case of misfortune depriving the child of its natural food supply the best substitute is the milk of some healthy woman with a baby of approximately the same age, a specific problem looms before the pediatrician. The service of the wetnurse is familiar in the history of infant feeding. The expense, shortcomings, difficulties and limitations of securing the cooperation of a "physiologic foster mother" are not far to seek, though it should be freely admitted to the glorification of motherhood that many women have in the past served splendidly as wetnurses for sentimental reasons and without thought of remuneration. However, infant feeding should be a matter of principle and not of impulse or sentiment.

In evident recognition of this situation is the more recent so-called commercial production of human milk and distribution in suitable containers. An effort in this direction was reported last year by Hoobler[5] of Detroit. Reviewing his observations over a period of ten years, he concluded that the efforts have passed through the experimental stage, though they cannot be said to have reached a dividend paying basis, unless one is content to count as such dividend the life saving qualities this commodity is known to possess when given to certain sick or premature infants. The Detroit experiment is only an illustrative instance of what has been attempted in various centers in this country with more or less success.[6]

The evolution of the milk industry, in the case of cow's milk, has included notable achievements. A regularity of distribution and an uninterrupted availability were assured long ago. Pasteurization and the production of certified products introduced factors of bacteriologic safety into a wholesome product of great nutritive value. The conservation of milk in various ways has long concerned the dairy industry, desiccation being the latest of the procedures to attain widespread recognition. Through the increasing perfection of dried milks the consumer has become independent of time and place, so that convenience and possibilities of deterioration are placed in a new light. Much of the criticism leveled at the earlier products, such as the destruction of vitamins through the desiccation process, is no longer warranted, owing to improvements in the methods of manufacture. At the present moment, indeed, the use of dried milks for infant feeding is not without some vogue. It is interesting, therefore, to learn that conservation by drying has been attempted with human milk.[7] The practicability was first established by animal feeding experiments which showed that suitably dried breast milk may retain at least three fourths of its antiscorbutic potency; and even after long "aging" the latter need not be entirely lost. The crucial test, on infants, has just been reported by Emerson[7] of the Boston Floating Hospital. He states that human milk, in dried form, with an average age of 100 days, has been acceptable to a small group of babies as a food. As might be anticipated, a perfect outcome has not yet been secured. One would scarcely expect an immediate panacea in the form of a single experimental product. The technical difficulties are admittedly large. Nevertheless, the new undertaking deserves attention as an effort in a promising direction. Dried human milk may become a successful reality.

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[3] Greenwald, I, and Gross, J.: The Effect of the Administration of a Potent Parathyroid Extract on the Excretion of Nitrogen, Phosphorus, Calcium and Magnesium, with Some Remarks on the Solubility of Calcium Phosphate in Serum and on the Pathogenesis of Tetany, J Biol Chem **66:** 217 (Nov) 1925

[4] Rose, Mary S: Feeding the Family, New York, the Macmillan Company, 1924, p 109.

[5] Hoobler, B. R: Human Milk, J. A M. A. **84:** 165 (Jan. 17) 1925.

[6] Compare, for example, Another Mother's Milk Station, J A. M. A. **85:** 1648 (Nov 21) 1925.

[7] Emerson, P. W.: The Collection and Preservation of Human Milk, J. A M A. **78:** 64 (March 4) 1922 Smith, L. W., and Emerson, P W.: Notes on the Experimental Production of Dried Breast Milk, Boston M. & S. J. **191:** 938 (Nov. 13) 1924 Smith, L. W.. The Experimental Feeding of Dried Breast Milk, J. Biol. Chem **61:** 625 (Oct) 1924 Emerson, P. W.: Dried Human Milk, IV, Dried Human Milk as a Food for Infants, Am J. Dis. Child **30:** 769 (Dec) 1925.

Current Comment

THE "ETHYL" (TETRA-ETHYL LEAD) GASOLINE REPORT

A few years ago research chemists, working in the interest of the motor industry, found that the addition of "tetra-ethyl lead" in concentrations of about 1 part to 1,500 of gasoline permitted the use of "lower test" gasoline, a matter of economic importance. By decreasing the velocity of reaction of combustion it eliminated "the knock." About two years ago the product was made commercially available under the name of ethyl gasoline, and more than three hundred million gallons was sold in a short time. This necessitated large scale manufacture of the organic lead compound, which was undertaken both in Ohio and in New Jersey; in spite of certain precautions and preventive measures instituted by the manufacturing plants, a number of workmen succumbed to the effects of tetra-ethyl lead. This created a feeling of uneasiness among public health officials concerning the possible hazards to the public arising from its use. A conference was called last May by Surgeon General Cumming to consider the problem. As a result, a special committee was appointed by the Surgeon General to investigate the hazard to the public by the use and distribution of the so-called ethyl gasoline; in the meantime the manufacturers withdrew the product from the market, awaiting the decision of the committee. Elsewhere in this issue[1] appears an account of the committee's report. Essentially the conclusions of the committee are that there was no evidence of poisoning from the use of ethyl gasoline as a motor fuel (as distinct from the manufacture and distribution of the product), and that drivers of cars using ethyl gasoline showed no signs of undue lead absorption. Probably the most surprising feature of the report is that in the controls, who were not exposed directly to ethyl gasoline, lead was found as a constituent of the feces. The explanation of the genesis of the lead is not given; this is an important point and will probably be cleared up by future investigations. The committee concludes that there is no valid reason why the sale and use of ethyl gasoline should be prohibited, provided its distribution and use are controlled by proper regulations; but it does emphasize that the manufacture and blending of tetra-ethyl lead require strict regulation. Lead has been known as an iniquitous poison because of its cumulative effect ever since the days of the early Romans. The committee itself realizes the experience of the past, and points out that the conclusions are open to criticism because they have been derived from the study of a relatively small number of persons who were exposed to the effects of ethyl gasoline for a comparatively brief period. If the use of leaded gasolines becomes widespread, conditions may arise that would render its use more of a hazard than would appear from this investigation. Longer experience may show that even such slight storage of lead as was observed in these studies may lead eventually in susceptible persons to recognizable lead poisoning or to chronic degenerative diseases of a less obvious character. In view of such possibilities, the committee feels that the investigations begun under its direction must not be allowed to lapse. In the meantime, as The Journal stated previously,[2] physicians should consider the possibility of lead poisoning in persons who may have been exposed even slightly to "ethyl gas" fumes, even though the evidence thus far presented is negative.

THE CIRCULATION AND CARBOHYDRATE UTILIZATION

Since the discovery of insulin and the better appreciation of how it may function in the organism, the interpretations of apparent disorders of carbohydrate metabolism have been revised. It has been recognized for some time that different persons show considerable variations in their response to the ingestion of liberal doses of sugar, such as 100 Gm. of glucose used in the so-called test of sugar tolerance. In some cases the resultant hyperglycemia is attended by an outpouring of sugar in the urine. But the level of sugar content in the circulating blood may far surmount the normal in such tests without any glycosuria attending the induced hyperglycemia. Conditions of hyperglycemia are observed not only in pancreatic disease, notably in outspoken diabetes, but also to a more moderate extent in nephritis and in hyperthyroidism. Of late, the exaggerated and prolonged hyperglycemia observed in persons with a low sugar tolerance has usually been ascribed to a deficit of insulin which is depended on to effect the disposal of sugar from the blood. Recent investigators[3] have pointed out, however, that another possibility is to be considered. Since muscle tissue seems to be a prominent site for removal of sugar from the blood, interference with the blood supply to muscle masses might be expected to alter the rate at which sugar leaves the blood. Considerable justification for this thesis is afforded by the studies of Cajori, Crouter and Pemberton[3] at the Presbyterian Hospital in Philadelphia. They have observed that by interfering with the blood supply to large muscle masses through elevation of the legs and one arm, an exaggerated and prolonged hyperglycemia can be induced in some persons. These facts are interpreted as indicating that the rate at which sugar leaves the blood after glucose ingestion can be influenced by the character of blood supply to tissues active in sugar removal. One is reminded of the circumstance that a low sugar tolerance has been noted in certain cases of arthritis[4] in which conditions may exist that permit the blood to pass through large masses of muscle with less change in chemical composition than usually takes place. Such mechanical factors should hereafter be taken into consideration in interpreting the nature of a low sugar tolerance.

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[1] Committee Report on Ethyl Gasoline, this issue, p. 370.

[2] Tetra-Ethyl Lead—Another Industrial Hazard, editorial, J. A. M. A. 83: 1511 (Nov. 8), 1924.

[3] Cajori, F. A.; Crouter, C. Y., and Pemberton, Ralph: The Effect of Changes in the Circulation on Carbohydrate Utilization, J. Biol. Chem. 66: 89 (Nov.) 1925.

Association News

DELEGATES PLEASE NOTE

Section 2 of the report of the Reference Committee on Reports of Officers, submitted to the House of Delegates at the Atlantic City Session, was as follows:

"Your committee also endorses the suggestion of the President and the Speaker that the House should adopt a plan whereby a more thorough consideration may be given to important measures before they are acted on finally by the House. The various councils of the Association are deliberative bodies, but the policies recommended by them should be considered carefully by reference committees before being accepted by this House. Your committee therefore, offers the following resolution:

"*Resolved,* That all reports of officers, Councils or standing committees of this Association, and all resolutions dealing with questions of policy of the Association, shall be filed with the Secretary of the Association sixty days in advance of the annual session of this House, published in the *Bulletin,* and mailed to every delegate at least thirty days before the annual session at which such resolutions or reports are to be considered."

After thorough discussion, this matter was referred to the Board of Trustees. At the meeting of this Board, held in Chicago, Sept. 4, 1925, it was decided that effort should be made to have the recommendations of the reference committee carried out this year.

To this end, it is desired that members of the House of Delegates who intend to introduce resolutions "dealing with questions of policy of the Association" at the Dallas Session will send copies of such resolutions to the secretary of the Association on or before Feb. 19, 1926. Such resolutions can then be published in The Journal and in the *Bulletin* during the month of March and, in this way, can be brought to the attention of delegates and members of the Association generally for careful consideration.

THE DALLAS SESSION

The Scientific Exhibit

The Committee on Scientific Exhibit calls attention to the fact that all applications for the Scientific Exhibit must be in the hands of the director before February 15. Any who desire an application blank may obtain it by sending a request addressed to Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. From the applications received so far, the exhibits at the Dallas Session promise to be of great scientific value and interest.

Applications for the special exhibit on cancer by the Section on Dermatology and Syphilology should be sent before February 6 to Dr. I. L. McGlasson, 817 City National Bank Building, San Antonio, Texas.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Greeks Found Sanatorium.—The Greek residents of Little Rock and Hot Springs have been granted a charter for the erection of a modern sanatorium at Hot Springs, to be known as the "Asclepios Sanatorium" and to cost $250,000.

Personal.—Dr. John C. Hughes has been appointed city health officer of Hoxie, to succeed the late Dr. Earl Thomas.——Dr. Roland N. Smith, Augusta, has been appointed physician to the Arkansas Boys' Industrial School, Pine Bluff.

CALIFORNIA

Pharmacist Arrested.—G. D. Johnson, a pharmacist of Stockton, was arrested, January 4, it is reported, on charges of performing an illegal operation and of practicing medicine without a license; he was released on $2,000 bail.

Society News.—Dr. Williams M. Marriott, St. Louis, will address the San Diego County Medical Society, San Diego, February 9, on "Some Newer Viewpoints Concerning the Nature and Treatment of Nephritis," and Dr. William C. MacCarty, Rochester, Minn., February 2, on "Gastric Ulcer and Carcinoma."

Personal.—Dr. John M. Scanland has resigned as superintendent of the Napa State Hospital for the Insane, Napa, and will engage in practice in San Francisco. Dr. Scanland was also formerly superintendent of the state hospital at Warm Springs, Mont.——Dr. Samuel B. Richards has been appointed deputy county health officer for Victorville.——Dr. Thomas O. Burger, San Diego, has been elected president of the staff of Mercy Hospital for 1926.

CONNECTICUT

Board of Healing Arts.—The members of the State Board of Healing Arts of Connecticut are Charles M. Bakewell, Ph.D., professor of philosophy, Yale University, New Haven, and former state senator; Ernest W. Crist, New Britain, former state representative, and Rollin U. Tyler, Deep River, judge of probate for his district. In compliance with a recent law, the board examines in anatomy, physiology, hygiene, pathology and diagnosis those applicants who desire to be licensed in the state to practice the healing arts; those who pass the examination receive a certificate which permits them to appear for examination before a licensing board. The board of healing arts acts also as a grievance committee to hear complaints against persons practicing the healing arts (The Journal, Aug. 29, 1925, page 683).

DISTRICT OF COLUMBIA

Undertakers as Neighbors.—The Medical Society of the District of Columbia announced, January 16, according to the *Washington Post,* a campaign to prevent undertakers from locating their establishments in Washington in the vicinity of physicians' office buildings. Learning that an undertaking firm proposed to locate at 1623 Connecticut Avenue, N. W., the society held a special meeting at which a resolution was adopted, which, among other things, stated that the locating of undertaking establishments in the vicinity of physicians' offices would have a most injurious and detrimental effect on the health of patients visiting those offices. The legal advisory committee of the society was directed to take all proper steps to carry out the intent and purpose of the resolution. The Washington Post said that the action taken by the medical society was probably the first time that it has ever ventured in civic matters. It appears that the zoning regulations of Washington force physicians to conduct their offices largely in the district known as the "first commercial district." The society favors the exclusion entirely from that district of undertaking establishments or funeral parlors.

FLORIDA

Laymen Board of Health.—According to the Brooksville *Herald,* the mayor of that city has appointed a new board of health comprising an engineer, Mr. F. S. Parrigin; a clergyman, Rev. J. C. Hill; an attorney, John Whitehurst; a representative of the women of the city, Mrs. Isom Beasley, and a representative of the business interests of the city, Mr. J. H. Murphy.

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[4] Pemberton, Ralph; and Foster, G. L.: Studies on Arthritis in the Army, Arch. Int. Med. 25: 243 (March) 1920.

State Board Will Not Quarantine Smallpox.—For the information of the public, the Florida State Board of Health gave out, January 8, a resolution concerning smallpox, which was adopted by the board in 1921, and still is in effect. It is as follows:

> WHEREAS, The majority of smallpox cases occurring in the state are not seen or diagnosed by a physician, and
>
> WHEREAS, The quarantine or isolation of the relatively few known cases of the disease gives the public a false sense of security, now therefore, be it
>
> *Resolved,* That the State Board of Health of Florida hold every individual or citizen responsible for the prevention of smallpox in himself or immediate family and that the public be advised that such prevention can be obtained on application to the state board of health for smallpox vaccine. Be it further
>
> *Resolved,* That the State Board of Health of Florida furnish free vaccine to any citizen of the state and wherever an epidemic of smallpox is threatened it make every effort to detail a district health officer to the infected community to give free vaccine to the public. Be it further
>
> *Resolved,* That the State Board of Health of Florida will not quarantine smallpox nor will it be responsible for the treatment, maintenance or sustenance of any case of smallpox occurring within the limits of the state.

GEORGIA

Society News.—Dr. and Mrs. Thomas C. Davison, Atlanta, gave a dance at their home, recently, in honor of the newly elected officers of the Fulton County Medical Society. ——Dr. Theodore Toepel addressed the Fulton County Medical Society, January 21, at the Academy of Medicine, Atlanta, on "Influence of Posture on the Development of the Child"; Dr. Rufus T. Dorsey, on "Tularemia," and Dr. James L. Campbell, on "Medical History as an Inspiration to the Professional Career."——The Thomas County Medical Society held a clinic at the John D. Archbold Memorial Hospital, Thomasville, Dec. 10, 1925, assisted by members of the staff of the University of Georgia Medical College.——Dr. Edgar R. Pund, Augusta, recently addressed the Richmond County Medical Society on "The Occurrence of Malignant Tumors In and About Augusta."

Personal.—Dr. J. E. Lester, Kennesaw, has been appointed health officer of Cobb County to succeed Dr. Leonard L. Welch, who resigned to engage in private practice.——Dr. Alexander H. Beazley, Crawfordville, has been appointed county physician to succeed Dr. John A. Rhodes, resigned. ——Dr. William I. Hailey, Hartwell, has been elected mayor of that city.——Dr. Carl C. Aven, Atlanta, who has been succeeded as chief of the staff by Dr. Zachary S. Cowan, was presented with a watch by the Tuberculosis Association of Atlanta.——Dr. Emile O. Scharnitzky, Augusta, has been elected to the executive board of the Prison Physicians' Association of America.——Dr. Charles L. Ridley, health officer of Macon and Bibb County, has been elected superintendent of the Macon Hospital.

ILLINOIS

Chiropractors Close Offices.—Following a visit from the state inspector, Don Dickson and Hanson Dickson, chiropractors of Lewistown, closed their offices, January 13, it is reported.

Physician Sentenced.—Dr. Don V. Poindexter, Greenville, was sentenced, January 4, it is reported, to serve one year and a day in the federal penitentiary at Fort Leavenworth, Kan., after having pleaded guilty to a charge of violating the Harrison Narcotic Law.

Quarantine Rules Revised.—The regulations for the control and prevention of pneumonia in Illinois have been completely revised by the state department of health; copies of the new rules have been placed in the hands of local health officers. The new regulations can be obtained on request to the board at Springfield.

Personal.—Dr. Charles W. Pfeiffer, Quincy, was elected president of the staff of St. Mary's Hospital at the annual election, Dec. 30, 1925.——Dr. Harry C. Moss, Carbondale, has been appointed acting division surgeon of the St. Louis Division of the Illinois Central Railroad.——Dr. Henry P. Carr of the International Health Board, New York, is on temporary duty with the state department of health investigating the prevalence of malaria in the southern part of the state to determine to what extent mosquito eradication may be employed practically as a health measure; he will work mostly in the rural districts.

Cost of Being Born.—It is safe to place the minimum average cost of being born in Illinois at $150, according to the state health director. Illinois pays annually, it appears, about $20,000,000 for obstetric nursing and hospital care for maternity patients. It is estimated that more than 40 per cent of the 140,000 annual births in the state occur in hospitals. Maternity hospitals are growing in favor with the public, and local communities have organized infant and child study clubs "by the score." A new movement in this field is that of the American Association of University Women, which is establishing child study clubs throughout the country under the management of qualified leaders; a number have been started in Illinois.

Chicago

Pasteur Lectures.—Dr. John J. Abel, Johns Hopkins University Medical School, Baltimore, gave the sixth Pasteur lecture before the Institute of Medicine of Chicago, January 22, at the City Club, on "Some Thoughts and Experiments in Relation to the Hormones." There was an informal dinner preceding the meeting. The previous Pasteur lectures were delivered by Graham Lusk, D.Sc., Dr. Theobald Smith, Dr. Jacques Loeb, Dr. Otto Folin, and Dr. William H. Howell. The next meeting of the institute will be February 26.

Hospital News.—Passavant Hospital will build a new home, costing one and a half million dollars, on the McKinlock campus of Northwestern University on the lake front near Chicago Avenue; the site has been given to the hospital by the university for ninety-nine years; one third of the beds of the new institution will be set aside for Northwestern University Medical School for clinical instruction.——Ground has been broken for the erection of a four-story addition to the American Hospital, Irving Park Boulevard and Broadway. ——The Illinois Masonic Hospital, Chicago, has let contracts for a seven story addition to cost $200,000.

Personal.—Dr. Malcolm T. MacEachern is in New Zealand studying the hospitals of that country and Australia; he will attend the International Hospital Conference and the annual meeting of the New Zealand Branch of the British Medical Association in February, and return to the United States in April.——Dr. Irving F. Stein has been elected president of the Michael Reese Ex-Interne Alumni Association.——Dr. Elven J. Berkheiser has been appointed attending orthopedic surgeon to the Children's Memorial Hospital.——Professors Anton J. Carlson and Arno B. Luckhardt of the physiology department, University of Chicago, have been elected foreign members of the Deutsche Akademie der Naturforscher, Halle, Germany; founded in 1652. This society has had among its foreign members Charles Darwin, Thomas Huxley, Louis Agassiz and S. J. Meltzer.

INDIANA

Measles at Indianapolis.—Two deaths from measles had been reported to the board of health at Indianapolis up to January 12, when forty new cases were placed under quarantine, bringing the total number of cases reported in January to 269.

State Board Officers Reelected.—Dr. William A. Spurgeon, Muncie, was reelected president of the state board of medical registration and examination, January 12; Dr. Eldridge M. Shanklin, Hammond, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Jesse W. Bowers, Fort Wayne, treasurer.

Society Clinics.—The Tippecanoe County Medical Society gave a banquet, January 15; Dr. William R. Cubbins, Chicago, gave an address on "Acute Intestinal Obstruction," and in the afternoon held a diagnostic, surgical clinic. The next meeting, February 11, will be a joint meeting with the dentists. William H. G. Logan, M.D., D.D.S., will conduct a surgical clinic at St. Elizabeth's Hospital in the afternoon.

Investigation of Absentees in Epidemic.—To determine the extent of the present scarlet fever epidemic, Evansville has instituted a plan of investigating why children are absent more than one day and of requiring them to have a physician's certificate before returning to school; sixty cases of scarlet fever are said to have been discovered in this manner. There are said to have been 155 cases under quarantine in Evansville, January 16. The extension of this plan to factories and office buildings is under consideration.

IOWA

Dispensary Board Appointed.—The Woodbury County Medical Society at a special meeting, January 13, appointed a board of directors as the initial step toward the incorporation of a new free medical dispensary in Sioux City. The members of the board are Drs. Foster Victor Brown, Frank L.

Secoy, Willard F. Conley, James Christensen and John A. Thomson; the lay members elected were Mr. Dave Davidson and Mr. R. J. Andrews.

LOUISIANA

Annual Physical Examination for State Board Employees.——The president of the state board of health announced, January 16, that the employees of the board in the future must undergo an annual physical examination; the measure was adopted by the board in view of its policy advocating physical examinations for the public.

Special Medical Meeting.—The dean of Tulane University of Louisiana School of Medicine announced a special medical meeting to be held in the Hutchinson Memorial Building, January 15, to which physicians were invited. Dr. William T. Councilman, emeritus Shattuck professor of pathologic anatomy, Harvard University, Boston, gave an address on "Medicine in China"; Dr. Aldo Castellani, recently appointed head of the department of tropical disease at Tulane, spoke on "Tropical Diseases."

Personal.—Dr. Philip H. Jones, Jr., has been appointed house medical officer at the Charity Hospital, New Orleans, to succeed Dr. Dale D. Corrington, who resigned to engage in practice in St. Petersburg, Fla.——Dr. John H. Musser, professor of medicine, Tulane University of Louisiana School of Medicine, New Orleans, gave a dinner, January 16, at the Luisiane in honor of Dr. Richard M. Pearce, New York. ——Mr. W. H. Lackey, Bureau of the Census, Washington, D. C., is in New Orleans checking the death reports of the state board of health; Louisiana was admitted to the death registration area in 1918.

MARYLAND

Dr. Lewis Honored.—A dinner of welcome in honor of Dr. Dean Lewis, surgeon in chief, Johns Hopkins Hospital, was given at the Alcazar, Baltimore, January 21, by members of the surgical staff of the hospital. Among those who accepted invitations to the dinner were friends of Dr. Lewis from various parts of the country. The speakers were Frank J. Goodnow, LL.D., president of the Johns Hopkins University; Dr. Harvey Cushing, Boston; Dr. Harvey B. Stone, Baltimore, and Daniel Willard, president of the Baltimore and Ohio Railroad and chairman of the Johns Hopkins half-century committee.

Rural Community Wants Physician.—In southern Dorchester County, on the eastern shore of Maryland, a community estimated at 3,000 people has no physician. According to residents of Wingate, several persons have suffered severely recently, because of the difficulty of getting medical aid from Cambridge, 25 miles away. More than 100 residents of the section have circulated a petition, and advertised in the papers for a resident physician. The section is said to be prosperous, the residents being mostly farmers and fishermen. Dr. Patrick H. Tawes, who retired about three months ago, practiced here for many years.

Society News.—Dr. Robert H. Riley, chief, bureau of communicable diseases, state department of health, addressed the Baltimore County Medical Association, January 20, as retiring president, on "The Achievements of Preventive Medicine in Reducing Communicable Diseases and the Application of Such Knowledge to Diseases of Middle Life." The new officers of the society are: Dr. William Rush Dunton, Jr., president; Dr. Edward H. Benson, vice president, and Dr. Walter M. Carmine, secretary-treasurer.——The surgical staff of the University Hospital, Baltimore, gave a testimonial dinner in honor of Dr. W. Wayne Babcock, professor of surgery and clinical surgery, Temple University School of Medicine, Philadelphia, at the Baltimore Club, January 11. Dr. Babcock gave an address at the University of Maryland on "A New Operation for Thoracic Aneurysm."——Dr. Jacques E. Forestier, Paris, France, discussed the use of iodized oil (lipiodol) in roentgen-ray examinations, January 21, at a meeting of the Baltimore City Medical Society.

MASSACHUSETTS

Personal.—Joseph Bequaert, Ph.D., has been promoted to an assistant professorship of entomology, and Donald L. Augustine, Sc.D., to assistant professor of helminthology at Harvard University Medical School, Boston.

Society News.—Dr. Joseph F. Montague, New York, formerly president of the American Proctological Society, addressed the Berkshire District Medical Society, Pittsfield, January 14, on "Office Methods of Rectal Surgery."

License Revoked.—The secretary of the board of registration in medicine reports that the registration of Dr. Catherine White Castle, Boston, was revoked, Nov. 6, 1924, as a result of conviction on the charge of criminal abortion, and that she was sentenced to the Sherborne Reformatory for women.

Changes in State Board.—The secretary of the board of registration in medicine writes that Dr. Charles E. Prior, former secretary, is now chairman, taking the place of Dr. Samuel H. Calderwood, Malden, and that Dr. Charles P. Sylvester, Boston, has been appointed a member of the board.

MINNESOTA

Diphtheria Immunization in Martin County.—With the cooperation of physicians, about 90 per cent of the school children of Martin County have been immunized against diphtheria by means of toxin-antitoxin; 100 per cent of the children have been immunized in some schools, and the work is still being done in other schools. The total number immunized by January 1 was about 2,300. The cost in each case is about $1.10, of which the physician receives about 84 cents and the county health association, 10 cents; the material costs 16 cents. Martin County is said to lead the state in this work.

MONTANA

Personal.—Dr. Duncan S. MacKenzie, Havre, has been appointed county health officer of Hill County, and Dr. Ellsworth M. Burke county physician.——Dr. Ferris L. Arnold, Billings, has been appointed liaison officer for the medical reserve corps in Eastern Montana and Wyoming; he will answer inquiries, and help in other ways, medical reserve officers or units in that district. Captain Arnold has been active in procuring the personnel for General Hospital no. 145, which has been assigned to Billings.

NEW YORK

Dr. Weiskotten Appointed Health Commissioner.—Dr. Herman G. Weiskotten, acting dean and professor of pathology at Syracuse University College of Medicine, has been appointed commissioner of health of Syracuse to succeed Dr. Thomas P. Farmer, who resigned to devote his time to private practice.

Nurses for Putnam County.—The board of supervisors of Putnam County, which has a total population of less than 11,000 persons, appropriated, Dec. 9, 1925, $7,200 for nursing service in the county, and will employ six public health nurses to cover the whole county, whereas in the past only three towns employed nurses; they will do public health work, school nursing and some bedside nursing.

Poliomyelitis Outbreak Traced to Milk.—The outbreak of infantile paralysis in Cortland, which amounted to ten cases, has been definitely "traced to milk," according to the New York State Department of Health. The outbreak occurred in December, 1925, and all except one of the cases had been associated with the consumption of milk from the same dealer. An investigation at the dairy failed to disclose any evidence of illness among the cows except that five reacted to the tuberculin test.

Typhoid Outbreak in Erie County.—Thirty-four cases of typhoid have been reported at Lackawanna and neighboring communities in Erie County since Dec. 14, 1925. The state department of health has learned in connection with this outbreak that last fall there were six deaths from enterocolitis in a children's institution in Lackawanna, and that many cases of so-called intestinal influenza occurred in November and December in some municipalities where there is now typhoid. A filtration plant is expected to be completed by April. The eight communities now affected obtain their water supply from Lake Erie.

New York City

Laymen Admitted as Associate Members.—The Kings County Medical Society adopted an amendment to its constitution and by-laws, January 19, which provides that laymen interested in science or in the service to the public of that society, or members of professions allied to medicine may become associate members of the society. The amendment was adopted by an overwhelming vote, according to the New York *Times*. A similar regulation is said to be in effect in the Philadelphia County Medical Society; with that exception the provision is said to be unique in that part of the country.

Foundation for Study of Heart Disease.—It was announced, January 10, at the annual dinner of Beth David Hospital, that Jacob Witkin has donated a large sum to establish a foundation for the study and prevention of heart disease, which will be a memorial to his wife, and which will be known as the Witkin Foundation. Dr. Albert S. Hyman, chief of the cardiac clinics at the Beth David Hospital, has been elected director of the foundation and the work will probably start immediately. It will cooperate, says the *New York Medical Week*, with the American Heart Association and the Association of Cardiac Clinics. Physicians are requested to submit interesting cases and problems to the director.

Society News.—Dr. William L. Rost, president, Bronx Pediatric Society, addressed the society, January 13, on "Excessive and Prolonged Milk Diet as a Factor in the Malnutrition of the Pre-School Child."——The possibility of merging the New York Heart Association with the New York Tuberculosis and Health Association was discussed last week at a meeting of their representatives at the Academy of Medicine. The New York Heart Association is sponsoring a course of thirteen lectures on heart disease for Thursday afternoons at its headquarters; the first three lectures were by Drs. John Wyckoff, Jr., Iago Galdston and Arthur C. De Graff.——Dr. Binford Throne has been elected president of the Brooklyn Dermatological Society; Dr. John C. Graham, vice president, and Dr. Ernest Almore Gauvain, secretary-treasurer.——At the annual meeting of the Yorkville Medical Society, January 18, an engraved resolution was presented to the outgoing president, Dr. Charles N. Gelber, on behalf of the members in recognition of his services as president; Dr. Louis I. Harris, commissioner of health, was designated by the executive board to present the resolution.——George A. Soper, Ph.D., director, American Society for the Control of Cancer, January 19, addressed a dinner given by that society at the Biltmore Hotel, on "What Europe Is Doing About Cancer."——Dr. Jerome Kingsbury has been elected president of the West Side Clinical Society.——Dr. Edward L. Creeden has been appointed acting director of the Bureau of Preventable Diseases by the health commissioner. Dr. Creeden has been in the city health department for many years.

OHIO

Exhibition of Medical Education.—There will be a free public exhibition at the University of Cincinnati College of Medicine, February 16-22, of the activities of the various departments of the school, and moving pictures of the phases through which medical students pass before they are fitted to practice medicine. The text will be "The Physician in the Making," and the slogan, "What Medical Science Means to You." The object is to convince the public of the indissoluble relation between science and medicine, and to show that brief courses are inadequate for an understanding of the ills of mankind. The exhibition will be under the auspices of the Public Health Federation of Cincinnati and with the cooperation of the Cincinnati Academy of Medicine. Committees in charge have been appointed from the three institutions, and physicians from various parts of the country will assist. The sessions will be from 10 to 2 o'clock, daily.

Personal.—Dr. Edward J. McCormick, for several years secretary of the Academy of Medicine of Toledo and Lucas County, was elected president of that organization at the annual meeting, January 8. This is said to be the only academy of medicine in the state which owns its headquarters, and one of two which employs a full-time secretary.——Dr. Louis O. Saur has been appointed health commissioner of Norwood to succeed Dr. Harry J. Wittenberg, resigned. Dr. Thomas R. Dickson, city chemist of Norwood, resigned to devote his time to private practice. Dr. William H. Klayer and W. H. Rhodenberg were appointed district physicians.——Dr. Frederick F. Dowds has been appointed a member of the board of health of Mount Vernon.——Dr. William De Kleine, director of the child health demonstration at Mansfield, addressed the annual meeting of the Visiting Nurses' League, Fort Wayne, Ind., January 30, on "Does Health Work Pay?"

OREGON

State Board Election.—Dr. William T. Phy, Hot Lake, has been elected president of the state board of health, to succeed Dr. Charles M. Barbee, Portland; Dr. Charles H. Morse, Salem, vice president, and Dr. Frederick D. Stricker, Portland, secretary, reelected. At the meeting, January 12, the board went on record as favoring the establishment of a school for training health officers and nurses in the state.

Hospital News.—The Good Samaritan Hospital, Portland, recently celebrated its fiftieth anniversary. Within the last ten years, improvements to the institution costing $450,000 have been provided.——A two story hospital for the Louise Home for Girls, Portland, is under construction, and a drive is being made in Multnomah County outside the city to provide funds.——A sanatorium and hotel at Hubbard Mineral Springs has been opened to the public.

PENNSYLVANIA

Personal.—Dr. George H. Haas, Allentown, was recently appointed a member of the board of trustees of the Allentown State Hospital by the governor.——Dr. Frank Alleman has been elected president of the board of health of Lancaster; Dr. Charles P. Stahr, secretary, and B. F. Charles, health officer.

Typhoid at Lancaster.—The outbreak of typhoid at Lancaster had amounted to twenty-one cases, January 13. In view of the size of Lancaster, the health department does not consider this an epidemic. Investigations are in progress to determine the source of infection; of the cases reported in December, fifteen were on one milk route, as were most of the cases reported to date in January. Positive findings in a suspected typhoid carrier were awaiting confirmation by the state board of health.

Philadelphia

Personal.—Dr. George E. de Schweinitz, formerly President of the American Medical Association, addressed the University of Pennsylvania Club, New York, last week.——Dr. William W. Keen, emeritus professor of the principles of surgery and clinical surgery, Jefferson Medical College, celebrated his eighty-ninth birthday, January 19.

Hospitals Merge.—St. Luke's Hospital and the Children's Homeopathic hospitals, Philadelphia, are to merge as one unit at the present location of the Children's Hospital, Franklin, Thompson and Eighth streets, where new buildings comprising a maternity building, an "adult" building, a dispensary, power house and laundry will be erected; they will be completed in about two years. St. Luke's will remain where it is until the new construction is completed. The new institution will have a capacity of about 350 beds, and will do general hospital work. There will be a complete reorganization of the staffs, so that regular service will be afforded all present chief and senior staff members. The identity of the two hospitals will be maintained in the new name.

SOUTH DAKOTA

Typhoid Immunization at White River.—For about six years, typhoid fever has occurred at White River and in the surrounding community. There has been an annual rodeo conducted there for twelve years, which attracts thousands of tourists and Indians, who camp around the town. There were fourteen cases of typhoid fever in White River last spring, and fourteen additional cases in Mellette County in August, outside the town. Following the epidemic in White Water, the superintendent of the county board of health, Dr. Francis E. Bouza, immunized 425 persons against typhoid, 236 of whom resided in White River, which has a population of 340. It is significant, the state board of health says, that there was not a single case of typhoid in White River last summer and fall, although in the county the disease was more prevalent than usual. It will be interesting to follow further the effect of immunization against typhoid at White River.

RHODE ISLAND

Last Year's Smallpox.—The state board of health in its annual report to the general assembly, January 15, said, it is reported, that there were more than four times as many cases of smallpox in the state last year than there was in the preceding ten years; ninety-four cases are said to have occurred in 1925. The report stated also that the board had conducted an investigation of forty-seven persons who were practicing medicine illegally; fifteen of them were brought into court; nine were convicted; six cases are pending. The board announces the appointment of Dr. Augustus G. Gigger as epidemiologist.

TENNESSEE

Health at Memphis.—Telegraphic reports from sixty-eight cities, with a total population of twenty-nine million, for the week ending January 16, indicated, according to the Department of Commerce, that the highest mortality rate (23) was in Memphis, and that the average mortality rate for these cities was 14.9. The mortality rate for Memphis in the corresponding week last year was 17.

Negro Quack Fined.—"Dr." G. H. W. B. Walker, said to be the proprietor of the "Walker Botanical Medical Laboratories and Invalid Hospital," Memphis, was fined $25, Dec. 12, 1925, it is reported, after pleading guilty to the charge of practicing medicine without a license and signing a death certificate as a physician. Walker is alleged to have solicited business through the mails and to have attracted a large number of tuberculous negroes to Memphis by offering a quick cure at low rates.

VIRGINIA

Personal.—Dr. David L. Kinsolving has been appointed a member of the Washington County Board of Health.——Dr. Achille Murat Willis was elected president of the Richmond Academy of Medicine at the recent annual meeting.

University News.—Dr. William J. Lenz, said to be a graduate of the University of Bonn and the University of Heidelberg, gave an address at the Medical College of Virginia, Richmond, January 6, on "Medical and Related Education in Europe." Dr. Lenz is visiting medical colleges in this country to determine, it is reported, why the number of American physicians taking postgraduate work in Europe has decreased.

WASHINGTON

Cultists Bills Killed.—The Public Health League of Washington notes that the efforts of the cultists in the last legislature to increase quackery in the state failed; among the bills killed were senate bill 153, the joker chiropractic bill, senate bill 201, which would have given sanipractors a separate board; house bill 106, which would have given nearly all the rights of general medical practice to sanipractors; house bill 191, providing a wide open policy for nearly all hospitals; house bill 192, which would make English the established language for prescriptions, and senate bill 176, which would have given a group of osteopaths the right to use narcotic drugs.

Personal.—Capt. John D. R. Woodworth, medical corps, U. S. Army, has been assigned to duty at Fort Lawton; Captain Woodworth comes from a tour of duty in Porto Rico.——Dr. Walter C. Johnson, who has been in charge of the Fort Spokane Indian Hospital at Miles, has resigned from the Indian service.——Dr. Frank C. Myers, Spokane, has been appointed health officer of Duchense County and of the city of Duchense.——Dr. John G. Cunningham, Spokane, has been appointed assistant chief surgeon of the Great Northern Railway; Dr. Cunningham has been chief of staff of the Sacred Heart Hospital, Spokane, for many years.——O. J. Morehead, Sanborn, Minn., has assumed the duties of county health officer at Walla Walla, during the absence of Dr. Joseph P. Kane, the health officer, who is at Johns Hopkins University taking a six months postgraduate course.

WISCONSIN

Personal.—Dr. Jerome R. Head, an instructor in surgery at the University of Wisconsin Medical School, Madison, and the Wisconsin General Hospital, has resigned to become a member of the surgical staff of the University of Illinois College of Medicine, Chicago; Dr. Head is a graduate of the University of Wisconsin and Harvard University Medical School.

PORTO RICO

School of Tropical Medicine.—Dr. William Darrach, dean, College of Physicians and Surgeons of Columbia University, New York, recently went to San Juan, in connection with the School of Tropical Medicine of Columbia University. Dr. Darrach conferred with the governor, the president of the senate, the chancellor of the university, the commissioner of health and other officials. He was the guest of Col. Bailey K. Ashford, M. C., U. S. Army.

Personal.—Dr. Frederick F. Russell, director, International Health Board of the Rockefeller Foundation, and Dr. Hector H. Howard, director of the board for the West Indies, recently visited Porto Rico; in company with the commissioner of health, Dr. Pedro N. Ortiz, and local representatives of the Rockefeller Foundation, they made a study of local health conditions.——Dr. Antonio Fernós recently visited the United States at the invitation of the International Health Board to study malaria control, returning to Porto Rico, Nov. 24, 1925.——Dr. Ramón Lavandera, chief, bureau of social medicine and puericulture, department of health, San Juan, recently spent three months in the United States, mostly in New York, Boston and Schenectady, studying health organization.——Dr. Ernesto Quintero, chief, bureau of venereal diseases, department of health, San Juan, has returned from Europe and the United States, where he studied recent advances in the treatment of venereal disease.——Dr. Américo Oms, who was in the department of health, San Juan, as medical inspector for several years, has resigned to engage in private practice in the city of Ponce.

GENERAL

Ship's Hospital.—In what is said to be the largest and fastest passenger steamship built in this country, there will be three hospital wards, two to accommodate eight passenger patients with operating room and dispensary, and another for six patients from the crew. The vessel is being built now at the Cramp shipyards, Philadelphia; it will ply between San Francisco and Honolulu.

Chiropractors "Dropped by the Wayside."—According to *Fountain Head News*, published at Davenport, Iowa, by "J. B. P.," more than 4,000 chiropractors' names have been taken off its mailing list since September, 1924; they have, it is said, "dropped by the wayside, closed up shop, taken down their shingles, gone into some other business, turned their diplomas face to the wall. . . . And the bottom has not been reached yet."

Resolution About Trachoma.—At a meeting of the directors of the Eastern Association on Indian Affairs, Dec. 2, 1925, the following resolution was adopted:

> Whereas, Reports of the Bureau of Indian Affairs disclose an alarming prevalence of trachoma among the Indians, and
>
> Whereas, Trachoma can be controlled if not eradicated by proper methods, and
>
> Whereas, Trachoma among the Indians also constitutes a serious danger to surrounding white populations, be it therefore
>
> *Resolved*, That we urge Congress to take immediate and effective action.

Charts for Posture Standards.—The Children's Bureau, U. S. Department of Labor, is issuing six charts on posture standards, for use by physicians, clinics, nurses and others; they were planned on the basis of experience in measuring and observing school children by Dr. Armin Klein at the Massachusetts General Hospital and the Boston City Posture Clinics. The charts are useful for classifying and comparing posture types, each one showing four silhouette figures illustrating excellent, good, poor and bad posture for one type of school child. A limited number of charts are available for free distribution; others will be sold by the government printing office, Washington, D. C., for 50 cents a set.

International Meeting on Tuberculosis.—The International Union Against Tuberculosis will meet in Washington, D. C., September 30-October 2, and the international meeting of the National Tuberculosis Association will meet in that city, October 4-7, with headquarters at the Mayflower Hotel. The session of the International Union Against Tuberculosis will be open only to members of the union, but the National Tuberculosis Association will avail itself of the presence of the foreign representatives, and its meetings will be open to all persons interested. Dr. Theobald Smith will deliver the presidential address, October 4, in the morning, and foreign visitors will speak at a general meeting in the evening, followed by a formal reception. The general subjects for discussion will be: (1) pathology, bacteriology and immunology; (2) clinical; (3) sociological. Arrangements will be made, if possible, with the foreign delegates invited, to give additional addresses under the auspices of the state and local tuberculosis societies. The committee on program and arrangements for this meeting has met twice and will soon meet again.

News of Epidemics.—School authorities at Albany, Ore., have requested that every child who has been exposed to smallpox remain at home for twenty-one days or be vaccinated; there were more than twenty cases of smallpox in that community, January 11, it is reported.——The state department of health is reported to have been investigating an outbreak of smallpox in Tuscarawas County, Ohio, where more than 150 cases have been reported since Nov. 1, 1925.——An outbreak of smallpox was recently reported in Jessamine County, Ky.; more than 2,500 persons were vaccinated.——Several patients with smallpox were quarantined at Harrah, Wash., and two cases were reported in Wapato, January 18.——The Willamette Grammar School, Oregon City, Ore., recently closed on account of an outbreak of scarlet fever. The county health officer, Dr. Frank Wallace, also reported twelve cases of smallpox in the northern part of the county.——The public schools of Crystal, Ind., and a country school known as Brush College were recently closed on account of an outbreak of smallpox.——There was an outbreak of smallpox in the city of Ottawa, Ill., of four cases, reported, January 13, one of which was said to be of the malignant type. ——Five cases of smallpox were present in Butte, Mont., January 12.——The Ridge School in Highland Park, Ill., was recently closed for an indefinite period on account of an outbreak of eight cases of scarlet fever among the pupils.——There have been more than 600 cases of German measles in Albany, N. Y., reported in the last two months.

Visiting Teachers' Demonstrations.—In cooperation with local boards of education, the Commonwealth Fund has arranged in its program for the prevention of juvenile delinquency to provide visiting teachers for three years in about thirty widely separated communities. The object is to assist the public schools in preventing delinquency and crime by giving special attention to pupils whose behavior makes them constant puzzles. The demonstrations, it is hoped, will determine whether timely study of the difficulties of these children will make them happier and more effective citizens. Child guidance clinics are now being conducted in Philadelphia and Cleveland under the direction of the National Committee for Mental Hygiene, and similar demonstrations have been carried on for months in five other cities; child guidance clinics are now fully supported by the local communities in St. Louis, Dallas, Minneapolis, St. Paul, Los Angeles, Memphis and Richmond; 270 cities applied for visiting teacher demonstrations under the Commonwealth Fund's plan, and from them about thirty were selected. They are:

Berkeley, Calif.
Birmingham, Ala.
Bluefield, W. Va.
Boone County, Mo.
Burlington, Vt.
Butte, Mont.
Charlotte, N. C.
Chisholm, Minn.
Coatesville, Pa.
Columbus, Ga.
Detroit, Mich.
Durham, N. C.
Huron County, Ohio
Hutchinson, Kan.
Kalamazoo, Mich.
Lincoln, Neb.
Monmouth County, N. J.
Omaha, Neb.
Pocatello, Idaho
Portland, Ore.
Racine, Wis.
Richmond, Va.
Rochester, Pa.
Rock Springs, Wyo.
San Diego, Calif.
Sioux City, Iowa
Sioux Falls, S. D.
Tucson, Ariz.
Tulsa, Okla.
Warren, Ohio

The Joint Committee on Methods of Preventing Delinquency reports that in ten of the twelve cities where three year demonstrations were recently closed, the visiting teacher service has been established as a regular part of the public school work.

FOREIGN

Urology Congress.—Notice has been received of the seventh assembly of the German Urologic Society, which is to convene at Vienna, Sept. 30, 1926. The two topics appointed for discussion are "Anuria" and "Malignancies of the Bladder." The secretary in charge is Dr. H. G. Pleschner, Alserstrasse 20, Vienna, Austria.

Medical Building at Exposition.—Elaborate preparations are being made for the Düsseldorf Hygiene, Social Service and Physical Training Exposition to be held this year. The *Münchener medizinische Wochenschrift* states that the organized profession is to have a building of its own to display the achievements of German medical men and what the medical profession means to the public; "in particular, the public will be given an idea of the immense amount of self-sacrificing work the physician accomplishes every day which is not understood by the public." Under the supervision of Dr. Schlossmann, professor of pediatrics, University of Düsseldorf, there will be demonstrations of child welfare and lectures in dietetics and hygiene, beginning May 8. Professor Schlossmann is the editor of Pfaundler and Schlossmann's "Encyclopedia of the Diseases of Children."

Personal.—Prof. H. Vincent, who presided at the international congress on military medicine last spring, and General Toubert of the medical staff, were presented recently with bronze portrait tablets as a souvenir of the congress. The *Presse médicale* reproduces these medallions and states that replicas can be obtained of them for 25 francs each by applying to the treasurer of the military medical school at Val-de-Grâce. ——Dr. Widal is in charge of the clinical week now being organized for Paris, July 15 to 18. Brussels, Toulouse and Tunis have each had one or more or will soon have one of these three or four day assemblies for postgraduate work and converse. Physicians flock to them from long distances. ——The *Klinische Wochenschrift* mentions that Dr. Brauer of the Koch Institute for Infectious Diseases, Berlin, has been appointed director of the bacteriologic institute at Sofia, Bulgaria.——Dr. Matagne, Brussels, has had to have a finger amputated on account of injury from the professional use of radium.——A bust of Dr. Demelin, accoucheur en chef honoraire to the Paris hospitals, was unveiled recently at the Maternité.——Dr. H. Brongersma has resigned the chair of urology at Amsterdam and will settle in southern France.——Dr. Bidou, Paris, who has charge of the rehabilitation of cripples department at the Salpêtrière, was recently awarded the fourth Jean Barès prize, given by the national bureau of researches and inventions to an inventor who has rendered distinguished service to French industry and is the father of three children at least. Dr. Bidou has twelve.——The Royal Astronomical Society of London has awarded this year's gold medal to Prof. Albert Einstein of Germany for his work on the theory of relativity.

Government Services

Veterans' Bureau Resignations

The *U. S. Veterans' Bureau Medical Bulletin* for January announces the resignation from the Veterans' Bureau recently of the following physicians:

Dr. Joseph J. Bateman, resigned at Washington, D. C., Nov. 6, 1925; Dr. Berna T. Bowers, resigned at Perryville, Md., Aug. 26, 1925; Dr. Richard H. Follis, resigned at Washington, D. C., Oct. 31, 1925; Dr. Samuel W. Holt, resigned at Fort Lyon, Colo., Oct. 31, 1925; Dr. Edward S. Imel, resigned at Fort Bayard, N. M., Oct. 12, 1925; Dr. Janvier W. Lindsay, resigned at Washington, D. C., Oct. 31, 1925; Dr. Alfred J. Ostheimer, resigned at Perry Point, Md., Oct. 23, 1925; and Dr. Maynard J. Simmons, resigned at Perry Point, Md., Oct. 31, 1925.

Army Personal

Major William A. Murphy, U. S. Army Medical Corps, stationed in Panama, sailed about January 9 for Arica, South America, to assist in caring for the health of Americans attached to the Tacna-Arica plebiscite commission.

Assignments Abroad

Senior Surg. Taliaferro Clark, U. S. Public Health Service, was assigned to duty in London, England, January 19, to take charge of quarantine and immigration activities in Europe; Surg. W. F. Tanner has been assigned to duty at Rotterdam, Netherlands; Surg. Dana E. Robinson has been assigned to duty at Antwerp, Belgium, from which post Surg. Lionel E. Hooper has been relieved; Surg. Walter W. King on instructions from Senior Surgeon Clark will proceed from Paris, France, to such other ports as may be necessary to examine aliens and enforce the quarantine laws, and return to his station; Surg. Lon O. Weldon has been directed to proceed from Liverpool, England, to Rotterdam, Holland, and Antwerp, Belgium, for a conference with the consuls at those places.

New System to Obtain Medical Officers

The *Military Surgeon* publishes the names of sixty medical students and twelve alternates who will graduate this year, who have been selected by competitive examinations for internships in the army hospitals, subject to physical examination. The largest number from any one school is eight from Vanderbilt University; six are from the University of Pennsylvania, and five from Jefferson Medical College. On graduation, these students will be commissioned in the medical reserve corps, and, August 1, will begin their army service as interns; if, after a year, they are favorably recommended by the commanding officers of the hospitals at which they serve, they will be eligible to be commissioned in the regular army without further examination, other than physical.

The Government Needs Physicians

The U. S. Civil Service Commission announces that vacancies exist in the Indian Service, Public Health Service, Veterans' Bureau, Panama Canal Service, Coast and Geodetic Survey, and other branches of the government, and that applications for positions will be received until June 30. The entrance salary ranges from $1,860 to $5,200 a year; there are higher salaried positions to be filled, and promotion may be made in accordance with civil service rules. There is a special need for physicians qualified in the specialties and in general medicine and surgery. Applicants will not be required to report for examination, but will be rated on their education and training and experience. Information can be obtained from the U. S. Civil Service Commission, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 2, 1926.

Insanity and Crime

Dr. John Carswell, in a paper on insanity and crime, read at a meeting of the Royal Medico-Psychological Association, said that the McNaghten rules had received such fresh support as to preserve them for another generation. Yet the medical profession would not admit that the controversy was ended; indeed, there seemed a desire for adjustment of the medical and legal points of view. The rule recommended by the Atkin Committee read: "It should be recognized that a person charged criminally with an offense is irresponsible for his act when the act is committed under an impulse which the person was by mental disease in substance deprived of the power to resist." The committee added: "It may require legislation to bring this rule into effect," and, later, "We have no doubt that if this matter were settled most of the criticisms from the medical point of view would disappear." Did the accused know what he was doing? And if he knew, did he know that it was wrong? These were the formulas framed by lawyers, and the psychiatrist had no responsibility for them. Fitzjames Stephen, in his History of the Criminal Law (**2**:174), after considering Maudsley's observations, said: "I understand by the power of self-control, the power of attending to general principles of conduct and distant motives and of comparing them calmly and steadily with immediate motives. Diseases of the brain and the nervous system may cause definite intellectual error, and if they do so, their legal effect is that of the innocent mistakes of fact. Far more frequently they affect the will by either destroying altogether or weakening to a greater or less extent the power of steady, calm attention to any train of thought." A series of cases in recent years showed that judges had charged juries in the sense indicated, and even in the much debated Ronald True case Mr. Justice McCardy left three questions to the jury. The first two were in the terms of the McNaghten rules, and the last was expressed thus: "Even if the prisoner knew the physical nature of the act, and that it was morally wrong and punishable by law, yet was he, through mental disease, deprived of the power of controlling his actions at the same time? If yes, then, in my view of the law, the verdict should be 'Guilty but insane.'" The judges who delivered charges in the sense quoted agreed that uncontrollable impulse could be read into the McNaghten rules; that was to say, the rules were logically insufficient unless some such idea could be incorporated with them. The recommendation was not based on any principle of criminal responsibility not already recognized.

Expected Results of Ban on Preservatives

Physicians are looking forward with interest to the expected improvement in the nation's health when the regulations forbidding the use of preservatives in foodstuffs come into force, in January, 1927. It will be an experiment on a vast scale. In a year's time 39,000,000 people, who for a generation have been feeding on food plus drugs, will begin to feed on drug-free food. The use of preservatives has been blamed for the increase of cancer. By the end of 1927 we shall have some evidence as to the correctness of that theory.

Health of the Air Force: Transfer of Casualties by Air

A general improvement in the health of the air force is recorded for 1924. Compared with previous years, the rates of admission to hospital, invaliding, and number of sick daily, and the number of days' sickness for each man were the lowest so far recorded. The incidence of primary venereal disease, already low, was still further reduced, and the rate, 16.3 per thousand of strength, was the lowest yet attained. The average strength of the force as a whole was 31,622, and the total number of cases of disease and injury was 32,337, equivalent to a case ratio of 1,019 per thousand of strength, as compared with a corresponding ratio of 1,227.3 during 1923. Excluding cases of forty-eight hours' duration, the case ratio was 463.6 per thousand, compared with 473.8 in the previous year. The death rate increased from 3.9 to 4.5 per thousand, but the final invaliding rate showed a reduction from 12.7 per thousand to 9.5. As a result of flying accidents, 169 cases of injury, resulting in sixty-nine deaths, were recorded in 1924. The number of deaths, as a percentage of the total casualties due to flying, remained the same as in 1923, namely, 41 per cent. A comparison of the figures for the last four years shows that the case rates per thousand of strength for officers and men were highest during 1924. Further, the increase in the case rate for officers was more marked for injuries than for deaths. The slight increase in the death rate for airmen is considered to be due to the increasing numbers of airmen-pilots qualifying and to the increasing number of airmen carried as passengers or undergoing instruction in aircraft. In connection with the progressive increase of cases, it is pointed out that the number of hours flown has increased each year in an even greater ratio. Further, aircraft are increasing in size and carrying capacity, and consequently a greater number of personnel is exposed to the risk of injury in the event of large aircraft being involved in an accident. A further factor during 1924 was the fact that four collisions in the air accounted for ten deaths. During 1923, no deaths from accidents of this kind were recorded. Actually, the hours flown to each fatal accident were higher during 1924 than in any of the previous years.

The transfer of the wounded by air, which initially was in the nature of an experiment, has become the recognized method in Irak, the conditions obtaining in that country being particularly suitable for this form of transport, while the employment of small aircraft for the carriage of stretcher patients cannot be regarded as otherwise than an improvised means in an emergency. It has been used with success when the casualty was located in a district where the employment of larger aircraft was impossible and also where there was need for immediate medical attention. Sitting and lying patients are normally evacuated in the larger types of aircraft. The total number of casualties transferred by air during 1924 was eighty-one.

Psychanalysis a Cause of Suicide

An inquest was held on a barrister, aged only 23, who committed suicide by throwing himself from his bedroom window. His father stated that he had been in pretty good health up to last August, but of late had been depressed and worried. His family wondered whether it was due to a girl that he had been friendly with until she went away some time ago. There was no reason in his association with the girl to lead him to commit the fatal act. He had asked his son, as the depression synchronized with the girl's going away, whether that had anything to do with it, and he replied that it had not. A physician who had attended the deceased said that he suffered from depression and melancholia, which he put down to nervous exhaustion. A physician and also a coroner, a friend of the family, said that the deceased was an only child, and, in a sense, he was never young, always being much older than his years. He had a fine scholastic career, at the end of which he passed his examinations for the bar in quick time. In the beginning he had an unusual amount of work for a young barrister, but it slackened, and this became a source of worry to him. Eighteen months ago, after returning from a holiday, the witness took him to a specialist, who thought he was suffering from epidemic encephalitis. About that time there was a girl to whom he had become in a mild manner attached, and her leaving London synchronized with the beginning of these troubles. He could not concentrate, and became self-depreciatory, unhappy, irritable and dogmatic. A few weeks later his father took him to a psychanalyst, a well known authority on the subject and attached to a large London hospital, but the treatment proved too great a strain and the trouble was intensified and produced a morbid condition of introspection and, through laying bare his subconscious mind, injured his mind greatly, and he had to give up the treatment. The self-depreciation manifested itself more particularly in his work, and he became affected so greatly that he began to think that he would have success in anything but the law. The witness' view was that although the boy did have a mild attack of epidemic encephalitis, and likewise was slightly troubled about the girl, and because success in his career had not continued, the cause of the condition to which he arrived was the psychanalysis. "While I do believe there are cases in which psychanalysis may do good," added the coroner, "in the majority, especially in such a case as this, the laying bare of his subconscious mind injured his sensitive mind and did him harm by debasing him. Within a few days of his death the deceased said how degraded the treatment made him feel, and that he felt he could not face it, and in consequence he had given it up. But the damage had been done." The coroner that held the inquest said there was no doubt that psychanalysis was a dangerous weapon in a large number of cases, and might aggravate the trouble from which a person was suffering.

A verdict of "Suicide while of unsound mind" was recorded.

The New Health Society

Sir W. Arbuthnot Lane, president of the New Health Society, explains in the lay press that this society was formed in the first instance by a number of physicians with the help of scientific experts and business men. They had come to the conclusion that the time had arrived when a society should be formed with the object of instructing the public in such laws of health as would insure freedom from the several diseases that affect members of a civilized community, but from which natives living under normal conditions are completely exempt. Such natives never suffered from the chronic diseases of the gastro-intestinal tract, which both directly and indirectly produce so much deterioration in physique, so much abdominal discomfort and mental and physical depression, or infections of the intestine and stomach, as colitis, appendicitis, gastric and duodenal ulcer and later cancer of the several portions of the intestinal tract. Besides these diseases, the absorption of poisonous products from an infected intestine produces contamination of the entire blood supply in the whole body. This foul blood causes a deterioration and degeneration of every tissue in the body, and, reducing their vitality and resisting power, permits invasion by organisms or toxins that produce rheumatism, rheumatic gout, tuberculosis, diseases of the heart, blood vessels, liver, gallbladder and kidneys, with cancer of the degenerating sexual organs of the women. All these diseases are due to mechanical and toxic changes in the gastro-intestinal tract consequent on the faulty diet and habits of civilization. The society determined to deal with the primary cause of all these diseases by instructing the public in such diet and habits as will prevent their development. For this it is necessary to provide in sufficient quantity such fruits and green food, whole flour bread, and the like, as are necessary to keep the body in health and render these simple foods accessible to those of limited means. It would be of great advantage to the nation if greater efforts were made to encourage the home production of more fruit, more milk, and cheaper vegetables.

The society feels that an immense amount of benefit would result from a comparatively small expenditure, by obviating much of the expenditure on hospitals and asylums and by insuring the development of a healthy, happy race. For this only a very moderate outlay of money is required, as compared to the vast amount necessary to attempt to cure disease once it has developed.

PARIS

(From Our Regular Correspondent)

Jan. 11, 1926.

Treatment of Chancroid with the Antistreptococcus Vaccine of Nicolle

Addressing the Société médicale des hôpitaux recently, Hudelo, Duhamel and Drouineau reported their favorable results with Nicolle's vaccinotherapy, after the method prescribed by Nicolle of Tunis, in a number of Ducrey bacillus infections. Their results confirm those published by several authors (Dubreuilh and Broustet, and Massias). The latter authors used a vaccine prepared by Nicolle himself. Hudelo and his co-workers used a commercial vaccine.

From the facts observed they draw the following conclusions: 1. In the chancroid stage, vaccinotherapy causes rapid cicatrization and prevents the dissemination of the bacillus with the formation of secondary chancres. 2. In the bubo stage, during the presuppurative, inflammatory period, vaccinotherapy combats pain and lymphatic involvement. In the suppurative stage, sometimes purulent resorption must be treated by a combination of vaccinotherapy with local treatment (simple puncture). 3. In the phagedenic stage, whether in the superficial or in the deeper tissues, vaccinotherapy brings about rapid cicatrization, provided one first gets rid of associated infections, and stimulates tissue repair. Spontaneous reinoculation has not been observed. Positive autoinoculation before the treatment was begun has become negative during the course of the treatment.

The technic is very simple. Injections are made intravenously. They are given usually every two days, or at longer intervals if the reactions have not completely subsided. The initial dose is 225 million bacilli, which is increased to 335, 450, 550, 675 and 675 million. Not more than six injections are given in a series. Ordinarily the effects are manifested following the first injections, and very often one cannot go beyond the third. As a rule, when the therapeutic action has been secured, it is well to give a supplementary injection. These injections cause violent general reactions, sometimes with pallor, tachycardia and tendency to faint. The patient should be advised of this. Marked reactions are due less to the vaccinotherapy itself than to the depression in certain patients who have been long infected. All the patients at the first injection give a febrile reaction. The temperature may reach 40 C. (104 F.) three hours after the injection, remain there for from six to nine hours, and then drop to normal within from twenty-four to forty-eight hours. The fever may, in rare cases, be accompanied by chills and vomiting. This therapy acts by means of shock. The authors have begun to study into this colloidoclastic shock, but their results are as yet insufficient for definite deductions. Hudelo and his co-workers have studied the specificity of the intradermal reaction with this vaccine and think that it is not absolute. In cases of mixed chancre, vaccinotherapy may bring out the characteristic indurate erosion of the associated spirochetal infection.

To sum up: Of nineteen cases in which vaccinotherapy was tried, the authors experienced but one failure. Treatment and convalescence are shortened and overcrowding of hospital wards thereby prevented.

Tuberculosis in Bakers

Parisot and Richard (Nancy) observed a mortality of 10 per thousand from tuberculosis among workmen in bakeries in the city of Nancy, whereas the mortality is only from 2.5 to 3 per thousand among the general population of the city. Among cake bakers, the mortality from tuberculosis is nil, and the morbidity is less than 1 per cent. The authors think that this difference is due to night work and to the fact that workmen in bakeries are not restricted by the eight hour law, and do not have a weekly rest period. Consumers of bakery goods run considerable risk when tuberculous workmen continue with their work.

Simultaneous Bilateral Therapeutic Pneumothorax

Rist, Coulaud and Chabaud recently presented before the Société des hôpitaux de Paris several observations on simultaneous bilateral therapeutic pneumothorax. In alternate bilateral therapeutic pneumothorax, carried out to combat a tardy bilateral infection, it may happen that the insufflations are commenced along with the bilateralization, before the primary pneumothorax has been completely resorbed in the side first treated; but in that case it is assumed that the lung on that side has sufficiently recovered to take over the respiratory function alone, and it is expected that it has regained sufficient expansion so that it will be safe to collapse the opposite lung, subsequently infected.

Simultaneous bilateral pneumothorax, however, is indicated not in tardy bilateralization but in early bilateral involvement. Here it is proposed to bring about a certain amount of collapse of the two lungs at the same time, relying for breathing on what remains useful in the lungs that have been reduced in volume. Simultaneous double pneumothorax appears to have been studied much more than alternate pneumothorax. W. Parry Morgan of Cardiff was the first to propose it in 1913 and he carried it out in a number of cases. Gwerder Pedoja, Barlow and Cramer have tried it. Bernou was the first in France to use the method, in 1923. Sergent, in 1924, communicated to the congress of Lausanne three cases of partial simultaneous double pneumothorax which he had instituted more or less as a prophylactic measure, the day following confinement, in tuberculous mothers; and Besançon and Jacquelin published the same year a very encouraging case of simultaneous bilateral partial pneumothorax.

The authors were induced to carry out simultaneous pneumothorax on seeing with what ease the patients endured a second pneumothorax before the first had been entirely resorbed, or, while the lung first collapsed and now partially expanded had, under the influence of a diffuse cicatricial sclerosis, lost considerable of its elasticity and volume.

Bernard and Le Play showed, several years ago, that the respiratory function may go on with much less pulmonary parenchyma than we have ordinarily. Some time ago, E. Coulaud presented a first case in which he had employed simultaneous bilateral pneumothorax with a success that cannot be denied up to the present time. To this first observation, the authors add a series of others. In several cases, the method did not prevent the tuberculosis from becoming generalized and fatal. But in other cases, fortunately, in which the degree of involvement rendered the situation more than grave, the simultaneous pneumothorax brought about remissions which have persisted in an unexpected manner.

The question arises whether this radical therapeutic method can effect a cure. A cure appears probable in a certain proportion of cases. It is at least certain that several of their patients have had their lives prolonged appreciably by this method.

GENEVA

(From Our Regular Correspondent)

Jan. 10, 1926.

Treatment of Gout

For the last three years the Geneva school has devoted much time to the study of blood dilution in gout. Increase in hydremia causes an acute outburst of the process. Effective prophylactic and therapeutic measures are those which increase the viscosity of the blood. In the treatment of gout the degree of blood dilution, measured by the degree of viscosity, or by any other means, should be ascertained. Furthermore, in a hyperuricemic gouty subject a course of diuretics or alkaline medication (vichy and similar waters) will not cause acute phenomena and therefore may be resorted to without reserve. In the hyperuricemic gouty subject with normal or subnormal viscosity, any treatment must be closely followed in order to prevent an acute outburst. With a dry diet and large amounts of sugar, combined with aperients, the blood viscosity can rapidly be increased. This is the most effective treatment to control an acute attack of gout.

Nostrums and Quackery

In the lay press, one will invariably find advertisements of nostrums or medical institutes, usually run by unqualified persons, inviting the public to write for a booklet which will be mailed free of cost, containing all necessary information regarding treatment. This deceitful publicity is clearly a form of illegal practice of medicine. The French minister of public hygiene, Mr. Justin Godart, has taken the initiative against this and his letter is worthy of being quoted:

> Many well founded complaints have been received relating to the exploitation of patients by enterprises attracting public attention by a publicity abusive in character in newspapers and periodicals, in circulars sent by post, etc. For the present, as far as advertisements in newspapers and periodicals are concerned, I ask the press to submit the insertion of medical advertisements to the following two conditions:
>
> 1. That the text be written with discretion and especially that the word "cure" does not appear. No honest physician or conscientious savant can claim that he can cure. The word "cure" is an impudent assertion, a fallacious promise characterizing an attempt to swindle.
>
> 2. That no medical advertisement shall be published under a pseudonym or imaginary scientific establishment such as Institute or Academy. In this respect the law is explicit. He who offers medical services must do so under his own name, thus engaging his responsibility and honor.

Judging by the lay press, the wishes of M. Godart have not been respected, and seem to be practically doomed to disappointment as long as the editors of newspapers are unable to control advertising published in their columns. In Switzerland, as in France and elsewhere, advertisements are in the hands of publicity agencies, who hire one or several pages in newspapers, provided the text contains nothing immoral. Medicopharmaceutic publicity takes large space and is an excellent source of income to these agencies. Hence, they are reluctant to give up this class of advertising. Dr. André Guisan of Lausanne has recently stated that "in the interests of public health a law should be passed prohibiting the lay press from publishing medical advertisements which, speaking mildly, are deceitful in at least 75 per cent of cases."

Development of Scientific Medicine

In the opening lecture in the course of medical philosophy at the University of Geneva for 1926, Dr. Cumston spoke of the development of scientific medicine, stating that medicine is an art supported by several sciences and becoming more certain day by day, thanks to notions derived from these sciences. Medicine depends on encouragement from biology and several sciences improperly termed accessory. Progress of medical art is due to discoveries made in the five hierarchic sciences. This progress has been accomplished by eliminating theological, metaphysical and mystic prejudices. It is a mistake to suppose that antagonism exists between practice and theory; theory is merely practice explained, and practice is only the application of the theory. Be it at the patient's bedside or in the laboratory, the same faculties are at play. The study of the sciences is necessary for the practitioner, because they give intellectual discipline, which leads him to act with full knowledge of cause and effect. What have been complaisantly called sagacity, tact and intuition in a physician are simply the inductions and deductions of any well educated man, so that their practical results are more to be credited to science than to the man. Consequently there is no opposition between practice and theory. Practice is scientific when it results in demonstrating the falsity of an established law on a given subject. Clinical work and diagnosis in particular are now on a scientific basis. Treatment is based on data acquired slowly and with difficulty by many generations of learned men. Therefore, providential hypotheses, unfortunately introduced into medicine, are to be discarded. If, in the eyes of the world, the practitioner still overshadows the man of science, it is merely for those patients who care less for exact data than for intuition and ask merely to be relieved of their symptoms. We are nearing the time when the empiricism of the early ages of medicine will be replaced by scientific application of remedies, but this will not be if we allow ourselves to be carried away by discoveries that prove useless after trial. We possess the means for diagnosing disease, and sure means of cure will be forthcoming if our enthusiasm for new therapeutic agents is kept in check.

VIENNA

(From Our Regular Correspondent)

Dec. 12, 1925.

Threatened Curtailments in Vienna Hospitals

The physicians of the Vienna hospitals, and more particularly of the Allgemeines Krankenhaus, or general hospital, became aroused recently over the report that the government was planning a reduction in the number of physicians attached to state hospitals. It was no secret that the reason for the proposed changes was that a number of chief physicians, through their liberal views and their expressions on religious and political subjects, had incurred the displeasure of the government, and that this means was to be taken to get rid of them, together with their assistants. It was planned, therefore, to close the wards or departments conducted by the offending heads or to combine them with the remaining clinics. If this idea had been carried out, a large number of young physicians would have been deprived of practical training, because here changes in the staff are easily accomplished, whereas in the clinics they are much more difficult. The league of hospital physicians, and the league of chief physicians, registered such an energetic protest that those in authority issued a statement that no hospital departments would be abandoned, nor the terms of service of old, experienced teachers or medical students be concluded. The doubts of the hospital physicians, however, have not been entirely dispelled. Attention is called to the fact that the crowded condition of the Vienna hospitals makes it imperative that additional space for general wards be provided.

Modern Conceptions of the Physiology of Work

At a recent meeting of the Vienna biologic society, Professor Rubner spoke on "Muscular Performance in Man." He discussed the problem from two different angles, that of industrial work and that of physical exercise for the purpose of health culture. The latter is intended to make the body not only healthy but beautiful, whereas occupational work often brings a one-sided muscular development. In spite of machines and chemistry, the demand for man power is still very great. Researches reveal that metabolic exchange consists of three distinct forms: (1) basal metabolism; (2) the specifically dynamic increase of metabolism resulting from food intake, and (3) work metabolism. The first type represents the extent of oxidation processes while fasting and in a condition of muscular rest. Through food intake the metabolism is increased in proportion to the quantity and quality of food ingested. For motor performance a still further increase of metabolism is required. The city dweller—especially, the sedentary worker—whose exercise consists mainly in walking to his office and back, has a daily metabolism of approximately 2,600 calories, 24 per cent of which is expended in muscular work. On the other hand, the metabolic exchange of persons engaged in hard labor—wood choppers, for example, who perhaps perform the severest labor of any class—amounts to 5,600 calories daily, more than 60 per cent of which is applied to muscular work. It will usually be noted that the protein intake increases in direct proportion with the number of calories consumed. The standard of muscular performance for a human being is usually placed at one-eighth horse power. The question as to the duration of a normal working day cannot be decided solely on a hygienic basis. Questions of prudence enter very largely into the matter. Climatic, economic and eugenic factors are important. Also the kind of clothing worn by workmen has a bearing, because the blood vessels that supply the skin and the muscles are still distended and surcharged after the work is done. An undue loss of heat may occur, which may produce a chilling of the body.

Hibernation

On the imperfectly understood subject of hibernation, Dr. Friedmann recently gave a lecture in the Vienna "Urania," an institute in which lectures for the instruction of the masses are held. The hibernating state has nothing analogous in the life of man. There are two forms of hibernation: the uninterrupted form, which has its onset with the beginning of winter and persists until spring, and the temporary form, which is interrupted on sunny days in winter, only to begin again with the return of cold weather. For example, the bear, when winter seems to be loosening its grip, will often leave his den but will return as soon as the mercury drops. Also the badger and the polecat rouse themselves frequently, whereas the marmot and the dormouse sleep the whole winter through. During the winter, the latter will not rouse themselves even when attacked. Their condition seems to resemble a state of unconsciousness, characterized by lowering of the body temperature, retarded circulation of the blood, slight and superficial breathing, no ingestion of food, no elimination of urine or feces; that is, the organism is set for a minimum of passive metabolism. The small amount of energy required for this existence is secured from the oxidation of deposits of fat found in the body. The mammals have a special hibernation gland which serves this purpose. Animals that change their temperature take on the temperature of their surroundings; it is said that frogs survive even though frozen in on all sides. The period of hibernation may extend over only a few weeks; or it may occupy nine months of the year. Those animals whose body temperature is subject to variations can be awakened from their sleep only by the slow application of heat.

Less well known than winter sleep is the summer sleep of a number of animals. Many species of fish—some of the Siluridae, for example—bury themselves in the mud or slime whenever the waters that they inhabit become dried up during a drought. They become entirely torpid, but the advent of the rainy season awakens them. In the tropics, many species of lizards, crocodiles, snakes and toads, during the dry season, lie in the warm, half-dry mud in swamps and river beds and sleep for days and weeks, just like the winter sleepers. During the summer sleep, as well, the consumption of energy is reduced to a minimum. It is true, it is possible to awaken these animals from their summer sleep, but they soon go to sleep again unless they are provided with water.

BERLIN

(From Our Regular Correspondent)

Dec. 12, 1925.

The Antivaccinationists

Since the introduction of compulsory vaccination by federal enactment back in the seventies of last century, there has been constant agitation in favor of either repealing or modifying the law. Some of the opponents hold that the law is superfluous and useless; others think that vaccination should be compulsory only when an epidemic is threatened. Both parties make use of the plea that they are conscientious objectors, especially since in England conscientious scruples are recognized as an excuse for noncompliance with the law. According to this principle, every lawful guardian of a child shall have the right to demand that the child shall be exempt from vaccination if the guardian declares that he has conscientious objections to the procedure. In view of the lack of knowledge displayed by the masses in matters of public health, it is evident that the admission of such a plea is a mere farce. All those who have come under the influence of a skilful agitator will plead conscientious objections. It is therefore surprising that Professor Grotjahn, who occupies the chair of hygiene at the University of Berlin and who has performed meritorious service, is in favor of the admission of conscientious objections as a valid excuse for failing to comply with the compulsory vaccination law. The sole explanation for this is that Grotjahn is a *Freiheitsschwärmer,* or freedom enthusiast, and consequently a member of the social democrat party. In an article in the *Deutsche medizinische Wochenschrift,* he has assigned the reasons for his attitude on the question. In connection with that article, the editor of the *Wochenschrift* published a large number of communications from experts, which prove what a blessing compulsory vaccination has been in the past and point out the dire results that would follow the introduction of the conscientious objections clause. Attacks on compulsory vaccination occur periodically in parliament, and more frequently now that the democratic and social democratic parties are so influential. For that reason, the president of the Prussian public health council recently called another conference of the adherents and opponents of compulsory vaccination. The arguments presented by the leading speakers deserve careful consideration. Professor Gins, the director of the Berliner staatliche Lymphanstalt, advanced the following statements: 1. The conscientious objections clause, in the form in which it is presented in England, destroys the principle of general vaccination and makes it dependent on the caprice of the parent or guardian. 2. In England and in other countries with similar vaccination regulations, the percentage of vaccinated persons has fallen off greatly. 3. These very countries have, in recent years, presented a considerable increase of smallpox cases. 4. Even the most rigorous isolation measures have not availed to eradicate smallpox in those countries. 5. On the contrary, the countries in which general vaccination has been enforced have remained free from smallpox in spite of constant exposure on the frontiers. 6. The conscientious objections clause would set our prophylactic campaign against smallpox back more than fifty years. 7. Therefore, for medicohygienic reasons, the introduction of the conscientious objections clause in Germany should be vigorously combated. 8. The introduction of the conscientious objections clause in Germany would not likely lessen the opposition to the vaccination law but would result in a considerable increase of antivaccination agitation. 9. The agitation in favor of the conscientious objections clause should therefore be combated by the authorities for political reasons as well.

The representative of the antivaccinationists, Dr. Winsch of Berlin, set up the following theses: 1. My own observations very early in life shattered my faith in the value and efficacy of vaccination against smallpox. 2. My own studies awakened in me later the conviction that the belief in the protective value of vaccination is only an illusion. The alleged proofs of the friends of vaccination will not stand the test of an earnest critical review—neither the statistical reports nor the Jenner experiment, nor the supposed differentiation of the annual supplies of men for the army caused by vaccination, nor finally the favorable military statistics of Prussia after the introduction of revaccination in 1834. 3. Vaccination is reprehensible from the standpoint of race hygiene, or eugenics, because the vaccination injuries weaken the constitution and cost unnecessary lives. 4. The belief in vaccination is a superstition, handed down from the past, which cannot be reconciled with the theory of asepsis that is generally recognized in medicine today. Vaccination introduces infectious material into a wound, which, under any other circumstances, would be regarded by medical opinion as a crime. Today, vaccination should be replaced by modern hygiene, to the progress of which we owe the conquest of smallpox as an epidemic disease. Hygiene is inoculation with health; vaccination is inoculation with disease. It is not vaccination that protects us from an epidemic; we must have in addition compulsory notification, isolation and disinfection. 5. The total or partial abolition of compulsory vaccination in England and Switzerland, in spite of the assertions of provaccinationists to the contrary, has proved beneficial. The alleged increased incidence of smallpox (with a very low mortality rate), reported in recent years from those regions by the provaccinationists, is only a bluff of the adherents of vaccination who are still officially in control and who hope by such tactics to regain the territory they have lost. The truth is, cases of chickenpox have been diagnosed as smallpox. 6. The effect, therefore, of the abolition of compulsory vaccination in Germany cannot be other than favorable.

To every physician who will judge them objectively, the difference between these two expositions from the standpoint of scientific insight and logical presentation will be readily apparent. Evidently, the difference was also apparent to the conference, for the outcome was that a large majority of those present decided in favor of compulsory vaccination and against the conscientious objections clause. A resolution was passed, however, to eliminate the section of the law requiring children whose parents resisted compulsory vaccination to appear before the police authorities, and to deal with this problem by the imposition of fines.

Marriages

Clement Biddle, Commander, U. S. N., retired, to Mrs. Rutherford Pearson, both of Philadelphia, Dec. 9, 1925.

Thomas Graham Glass, Marlin, Texas, to Miss Dorothy Marshall of New York, at Dallas, January 12.

William G. Falconer, Clearfield, Pa., to Miss Mary Waterworth of Syracuse, N. Y., recently.

Dudley Cromwell Kalloch to Miss Marjorie Overman, both of Mescalero, N. M., January 1.

William J. Doyle to Miss Alice Smith, both of Wilkes-Barre, Pa., Nov. 25, 1925.

Samuel W. Vernick to Miss Phoebe B. Herbert, both of New York, January 8.

Deaths

Charles Howard Lewis ⊕ Richmond, Va.; University of Maryland School of Medicine, Baltimore, 1900; formerly assistant professor of pharmacology and demonstrator of physiology, University College of Medicine, Richmond, and associate professor of physiology and instructor in obstetrics, Medical College of Virginia, Richmond; served in the M. C., U. S. Army, during the World War; aged 48; died, January 3.

William F. Brunner, Savannah, Ga.; University of Georgia Medical Department, Augusta, 1877; commissioner of health for Chatham County and formerly city health officer of Savannah, Spanish-American War veteran; aged 67; died, January 3, at a local hospital, of complications resulting from a fall which fractured his hip.

James Avery Draper ⊕ Wilmington, Del.; University of Pennsylvania School of Medicine, 1898; formerly president of the city board of health; served in the M. C., U. S. Army, during the World War; on the staffs of the Delaware and St. Francis hospitals; aged 51; died, Dec. 9, 1925, of pneumonia.

Wooster Hassell House ⊕ Goldsboro, N. C.; Jefferson Medical College of Philadelphia, 1915; formerly secretary of the Wayne County Medical Society; served during the World War; on the staff of the Goldsboro City Hospital, where he died, January 3, of angina pectoris, aged 34.

Reuben F. Eldridge, Dawson, Iowa; State University of Iowa College of Medicine, Iowa City, 1882; member of the Iowa State Medical Society; aged 68; died, January 3, at the Kings Daughters Hospital, Perry, of injuries received in an automobile accident.

Thomas S. Adams, Baton Rouge, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1900; member of the Florida Medical Association; for many years member of the state board of health; aged 61; died, January 1.

George Wilbur McGregor, Littleton, N. H.; Dartmouth Medical School, Hanover, 1878; member of the New Hampshire Medical Society; formerly member of the board of health; aged 72; died, Nov. 8, 1925, following a long illness.

Henry Charles Hoch, Cincinnati, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1908; aged 60; died, Dec. 9, 1925, at a hospital in Iowa City, following an operation for carcinoma of the throat.

Reuben B. Jackson, Mexia, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1886; member of the State Medical Association of Texas; aged 66; died, January 1, of heart disease.

Harris Day ⊕ Branchville, N. J.; Medical Department of the University of the City of New York, 1893; past president of the Sussex County Medical Society; aged 58; died, Dec. 1, 1925, of cerebral hemorrhage.

Samuel K. Smith ⊕ Port Huron, Mich.; Medical Department of Columbia College, New York, 1890; past president of St. Clair County Medical Society; aged 62; died, January 1, of cerebral hemorrhage.

John Joseph Moore ⊕ Pottsville, Pa.; Medico-Chirurgical College of Philadelphia, 1905; served in the M. C., U. S. Army, during the World War; aged 43; died, Dec. 31, 1925, following a long illness.

Charles Gordon Fuller ⊕ Chicago; Chicago Homeopathic Medical College, 1881; formerly on the staff of the Evanston (Ill.) Hospital; aged 69; died, January 17, at Pass Christian, Miss., of heart disease.

Philemon Jenkins Macon, Warrenton, N. C.; University of Maryland School of Medicine, Baltimore, 1883; formerly member of the state legislature and board of education; aged 66; died, Dec. 27, 1925.

Edward Ross Elliott, Montgomery, N. Y.; Medical Department of the University of the City of New York, 1875; member of the Medical Society of the State of New York; aged 72; died, January 7.

Geiger A. Burch, Jacksonville, Ga.; Atlanta College of Physicians and Surgeons, 1901; formerly member of the board of education; aged 53; died, recently, at Las Cruces, N. M., of tuberculosis.

Louis Joachim Marnitz, Chicago; Bennett Medical College, Chicago, 1912; member of the Illinois State Medical Society; aged 58; died, Oct. 14, 1925, of cerebral hemorrhage and arteriosclerosis.

Samuel Henry Garvin, Detroit; University of Louisville School of Medicine, 1861; Bellevue Hospital Medical College, New York, 1865; Confederate veteran; aged 86; died, Dec. 29, 1925.

William R. Smith, Red Level, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1886; member of the Medical Association of the State of Alabama; aged 70; died, Dec. 6, 1925.

Christian E. Jauss, Harrisburg, Pa.; Jefferson Medical College of Philadelphia, 1882; member of the Medical Society of the State of Pennsylvania; aged 66; died, in December, 1925.

James Law ⊕ New York; Medical Department of the University of the City of New York, 1891; aged 70; died, Dec. 26, 1925, of chronic myocarditis and dilatation of the heart.

Addison Key Bell, Madison, Ga.; Medical Department of the University of the City of New York, 1885; member of the Medical Association of Georgia; aged 64; died, January 1.

Joshua W. Meshew, Barlow, Ky.; University of Louisville School of Medicine, 1889; member of the Kentucky State Medical Association; aged 62; died suddenly, January 2.

Edward L. Rose ⊕ Port Arthur, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1909; county health officer; aged 54; died, Dec. 16, 1925.

Robert Allan Lee, Frobisher, Sask., Canada; Grand Rapids (Mich.) Medical College, 1902; Queen's University Faculty of Medicine, Kingston, Ont., 1904; died, Dec. 5, 1925.

Charles Pierce Davenport, Hartford, Ark.; Vanderbilt University Medical Department, Nashville, 1889; member of the Arkansas Medical Society; aged 72; died, January 1.

Walter Lovejoy, Lime, Ore.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; College of Physicians and Surgeons, Chicago, 1883; aged 71; died, January 1.

George R. Farra, Corvallis, Ore.; University of Louisville (Ky.) School of Medicine, 1877; member of the Oregon State Medical Society; aged 82; died, Dec. 27, 1925.

James Bassett Rawlings, Lawrenceville, Va.; Medical College of Virginia, Richmond, 1889; member of the Medical Society of Virginia; aged 59; died, January 1.

William George Bechtold, Breese, Ill.; Missouri Medical College, St. Louis, 1884; died, January 6, at St. Elizabeth's Hospital, Belleville, of cerebral hemorrhage.

Daniel W. Ward, Forest Grove, Ore.; Cooper Medical College, San Francisco, 1878; aged 80; died, Dec. 13, 1925, of injuries received in an automobile accident.

John Francis Hunter, Mamaroneck, N. Y.; Bellevue Hospital Medical College, New York, 1889; formerly village president; aged 60; died, January 1.

Thomas Henry Lewis ⊕ Chicago; Chicago Medical College, 1896; on the staff of St. Luke's Hospital, where he died, January 16, of bronchitis, aged 53.

Melville Logan Casselberry, Philadelphia; Homeopathic Medical College of Pennsylvania, Philadelphia, 1853; aged 95; died, January 3, of senility.

Thomas F. Britt, Lincoln, Neb.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; aged 69; died, Dec. 27, 1925, at a local hospital.

Samuel Chambers Bridgewater, Dixon Springs, Tenn.; University of Nashville Medical Department, 1877; aged 69; died, January 2, at Nashville.

John Downs, Fort Madison, Iowa; College of Physicians and Surgeons, Keokuk, 1878; aged 71; died, January 2, following a long illness.

Hamilton Hollidey, Fort Edward, N. Y.; Albany Medical College, 1884; aged 74; died, January 1, at Schuylerville, of cerebral hemorrhage.

Robert O. Broadway, Fountain, Colo.; Kentucky School of Medicine, Louisville, 1893; aged 58; died, Dec. 6, 1925, at Granite City, Ill.

Lemuel L. Long, Toulon, Ill.; Jefferson Medical College of Philadelphia, 1883; aged 73; died, January 14, of heart disease.

John H. Cushenberry, Girard, Kan.; St. Louis Medical College, 1872; aged 72; died, Dec. 19, 1925, following a long illness.

Hedley Leeming Anderson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1868; died, Nov. 11, 1925.

Lawrence C. McCabe, Portland, Ore.; Jenner Medical College, Chicago, 1898; aged 62; died, Dec. 22, 1925.

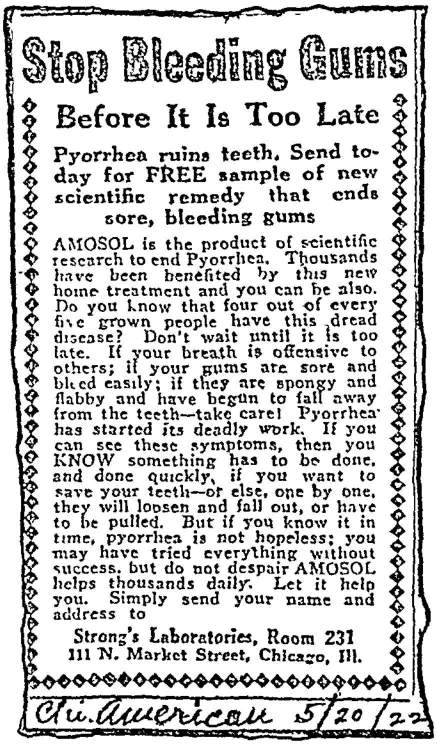
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

AMOSOL DECLARED A FRAUD

A Pyorrhea Cure Put Out of Business by the Post Office Department

On January 16, 1926, the Post Office Department declared that the concern known as the Strong Laboratories of Liberty, Missouri, was engaged in conducting a fraudulent scheme through the mails and issued a fraud order against it. Strong Laboratories was a trade name used by Henry Strong Smith and his wife, Lourania N. The name was adopted by Mrs. Smith, who started the business in 1922 in Chicago. Later the concern was moved to Kansas City, Mo., and still later to Liberty, Mo., about thirteen miles from Kansas City.



Stop Bleeding Gums

Before It Is Too Late

Pyorrhea ruins teeth. Send today for FREE sample of new scientific remedy that ends sore, bleeding gums

AMOSOL is the product of scientific research to end Pyorrhea. Thousands have been benefited by this new home treatment and you can be also. Do you know that four out of every five grown people have this dread disease? Don't wait until it is too late. If your breath is offensive to others; if your gums are sore and bleed easily; if they are spongy and flabby and have begun to fall away from the teeth—take care! Pyorrhea has started its deadly work. If you can see these symptoms, then you KNOW something has to be done, and done quickly, if you want to save your teeth—or else, one by one, they will loosen and fall out, or have to be pulled. But if you know it in time, pyorrhea is not hopeless; you may have tried everything without success, but do not despair AMOSOL helps thousands daily. Let it help you. Simply send your name and address to

Strong's Laboratories, Room 231
111 N. Market Street, Chicago, Ill.

Chi. American 5/20/22

Amosol, the nostrum exploited by the Smiths, was an alleged cure for pyorrhea. It was described in the advertising as a "miracle," a "new scientific discovery" that "kills pyorrhea germs and heals gums quickly." Victims were reached, of course, by advertising. Some advertising was done in newspapers, but the bulk of the business was secured by sending out post cards addressed to individuals on "sucker lists." Those who answered the advertisements or post cards received form letters telling them that Amosol was a "great scientific discovery," the "result of years of study and reseach" — statements which the Smiths knew were false and fraudulent. During the height of exploitation the Smiths received about five hundred letters a day and took in $4,000 a month.

The postal inspector who investigated this fraud was told by Henry Strong Smith that he got the idea of exploiting this scheme from a similar swindle put out by the Moore Medicine Laboratories. (The Moore concern was declared a fraud by the postal authorities, Aug. 27, 1925, and the case reported in THE JOURNAL, Sept. 26, 1925.) Smith said that he procured a sample of the Moore nostrum, had it analyzed, and then prepared a formula from which Amosol was made. Smith also admitted that he copied the advertising literature of the Moore Medicine Laboratories. He admitted, too, that the preparation that he sold as a new, scientific discovery, the result of years of study and research, was in reality what is commercially known as "stock dip." Amosol had the following composition:

"Creosote	45 lbs.
"Rosin	3 lbs.
"Hot water	12 lbs.
"38% caustic soda	12 lbs."

To this large amount of material were added a few ounces of black oil compound, 1 ounce of oil of peppermint and $\frac{1}{10}$ of 1 per cent fluid extract of ipecac. Smith's only claim to a knowledge of drugs was that he had studied chemistry in Beloit College, Wisconsin, and had formerly been an assistant pharmacist in the same town.

The postal authorities submitted specimens of Amosol to the Bureau of Chemistry, which analyzed it and reported that it was an ordinary cresol emulsion such as is used as a disinfectant for killing lice, ticks, etc. The chemists showed further that while the mixture in sufficient concentration was a germicide, it could not be kept in the mouth in such concentration sufficiently long to kill any material number of bacteria.

In March, 1925, when the inspector called on the promoters of this fraud at their place of business at Liberty, Missouri, it was found that in addition to Amosol the Smiths were engaged in selling through the mails the following preparations:

"Solite" (a tooth powder).
"Dermax" (for eczema).
"Loria" (for asthma).
"Jeng" (for kidney trouble).
"Corn Cream" (for the instant removal of corns).
"Smile-Lax" (a laxative).
"Night Cap Cold Remedy."

Later Smith advised the inspector that they had discontinued selling all remedies except Amosol, Solite and Corn Cream.

In the Amosol advertising matter a "Dr. Strong" is referred to. There was no such person connected with the business. In fact, the name Strong in Strong Laboratories is the middle name of H. Strong Smith. Some of the form letters sent to prospective victims of Amosol were signed "L. Foree Nourse." This, it seems, was Mrs. Smith's maiden name, and was used rather than the name Smith because it was more "classy." Of course, the Strong Laboratories had no laboratories and employed no physicians, chemists or pharmacists.

On Sept. 16, 1925, the Strong Laboratories were forwarded a memorandum of the charges, and the two Smiths were called on to show cause on Oct. 6, 1925, why a fraud order should not be issued. On that day L. L. Hamner, a Washington attorney, requested a continuance, and the hearing was postponed to October 16. On that date the attorneys asked for a further continuance. Owing to the congestion of the calendar of fraud order cases, no early date was available to which the case could be postponed, and the government suggested that if the Smiths would agree to have their mail held by the postmaster at Liberty, Mo., pending the hearing, a further continuance would be granted. The attorney agreed to that arrangement but asked time to communicate by telegraph with his clients. Later in the day the attorney informed the government officials that he had been unable to obtain authority from the Smiths to have the mail held. The attorneys were finally advised that the case had been continued to Jan. 12, 1926.

On October 21, 1925, Lourania N. Smith attempted to forestall the government's action by applying to the United States District Court at Kansas City for an injunction against the postmasters of Chicago, Kansas City and Liberty, to restrain them from enforcing a fraud order that was alleged had been decided to be issued by the Post Office Department on October 16. The judge denied the application, stating that the petition failed to set out the basis of the fraud order.

On January 11, Mr. Hamner again called on the postal authorities at Washington and exhibited a letter signed by Lourania N. Smith. This letter declared that the "business of Strongs Laboratories has practically ceased and there is practically no mail being received by Strongs Laboratories at Liberty, Missouri." Mrs. Smith's letter further declared that she had authorized the postmaster at Liberty to mark on each letter or other mail addressed to Strong's Laboratories the words "out of business" or "defunct" and return all such letters or mail matter to the senders. It was also suggested that if the Post Office Department would permit Mrs. Smith to discontinue the business instead of issuing a fraud order she would ask that the injunction suit be dismissed. The postal authorities very rightly informed the attorneys for the Smiths that in view of all the circumstances, the matter would be handled in the regular course and that they could appear on January 12, the date set for the hearing. On that day the matter was taken up in formal hearing with the result that Judge Horace J. Donnelly, solicitor for the Post Office Department, recommended to Postmaster General Harry S. New that a fraud order be issued against this concern. It was issued.

Correspondence

LABORATORY AID IN WHOOPING COUGH

To the Editor:—Apropos of your editorial of January 16, permit me to state that, had Dr. G. F. Powers taken the trouble to review the literature on whooping cough, he would have been spared the arduous labor of proving an observation which I made clinically several years ago. In my book on Diseases of Children, published in 1921, page 433, appears the following definite statement: "I wish to direct particular attention to the marked antispasmodic value of calcium and sodium hypophosphites in mitigating and often completely arresting the 'whoop' of pertussis. I have been led to administer these drugs after noting the close resemblance between the manifestations of laryngeal spasm of spasmophilia (spasmus glottidis) and those of whooping cough, and observing the beneficent action of lime and soda hypophosphites in spasmophilia. Furthermore, it seemed to me quite plausible to assume, that, as is claimed in spasmophilia (e. g., tetany), the whoop of pertussis may also be due to some functional disturbance in the parathyroids arising traumatically as the result of the harassing cough during the earlier stages of pertussis." I entirely disagree with Dr. Powers that the spasm in whooping cough, in these cases, is *due to rachitis, since the convulsions are most common* among very young infants, nay, even the newly born; i. e., at an age when rickets is of very exceptional occurrence.

Herman B. Sheffield, M.D., New York.

HEMATOMA OF RECTUS ABDOMINIS MUSCLE

To the Editor:—The report by Culbertson (The Journal, Dec. 19, 1925), of cases of hematoma occurring spontaneously in the sheath of the rectus abdominis muscle, leads me to report briefly the following series. The cases differ from Culbertson's in that suppuration occurred in every instance. I reported on these cases orally to the Denver Clinical and Pathological Society shortly after their occurrence, and they were referred to by Ingraham in his discussion of Culbertson's paper.

The seven cases, in two of which a double lesion was noted, all occurred in inmates of army hospitals in the southwest quarter of the United States, during the months of the prevalence of the great influenza epidemic. In every instance the patient had been very ill, with cough of extreme severity, and *in practically all a diagnosis of influenzal bronchopneumonia* had been made. A rounded swelling the size and shape of the larger end of an egg was present in one of the lower segments of the rectus muscle, tender and painful, but without visible ecchymosis. In two of the cases the lesion was bilateral, in corresponding segments of the two rectus muscles.

All the patients were operated on by surgeons in the respective hospitals; in all, creamy pus was evacuated, and recovery was prompt and uneventful, so far as I know. I never received reports of the laboratory examinations of the pus, but my impression is that one was said to be a streptococcic infection, and it is reasonable to believe that others were.

It seems probable that the origin of these cases was as follows: As the result of the severity of the cough, rupture of muscle fibers occurred, hemorrhage took place into the injured segment of the rectus muscle, and suppuration followed from a blood-stream infection associated with the bronchopneumonia.

I have heretofore refrained from reporting these cases in writing, because of the fragmentary nature of my data concerning them. My only excuse is that, as consultant in internal medicine to sixteen great hospitals widely scattered in many states, I had neither time nor opportunity to follow up individual cases.

I observed an exactly similar abscess in a young woman, with Dr. T. J. Danahey in Denver, just after my return to practice.

In connection with Culbertson's interesting report, it seems proper that these scanty and incomplete observations should be placed on record.

As the hospitals in which the cases were seen had a peak capacity of about 30,000 beds, the relative incidence of these abscesses was extremely small.

J. N. Hall, MD., Denver.

IRON IN ANEMIA

To the Editor:—I always read the editorials in The Journal with interest and consider them of great value to the profession. In an editorial, Oct. 10, 1925, on iron in therapeutics, the impression is left with the reader that iron is of no value in anemia. I may have been guilty at an earlier time, but recently (*Am. J. Physiol.* **72**:395 [May] 1925) Robscheit-Robbins and I furnished experimental data indicating that severe prolonged anemia due to hemorrhage may so deplete the iron reserve of the body that inorganic iron may be potent. My earlier experiments, like those of Drs. Williamson and Ets, were concerned with short period anemia experiments due to a few bleedings. Under these conditions, iron gives no evidence of beneficial results. These findings on dogs have been confirmed by many other workers using dogs and other animals. The paper of Williamson and Ets is the last of a considerable series.

It seems to me unfortunate that the editorial should not present more complete data on the question under dispute. If work on animals has any significance in relation to human beings, we can say without hesitation that inorganic iron *certainly does have an influence in long standing* severe anemias that it does not have in short anemias.

George H. Whipple, M.D., Rochester, N. Y.

"THE ULTRAVIOLET RAY AS A PROPHYLACTIC AGAINST RADIODERMATITIS"

To the Editor:—In an article entitled "The Ultraviolet Ray as a Prophylactic Against Radiodermatitis" by George C. Andrews and the writer, published in The Journal, Nov. 28, 1925, several errors were made when quoting from an article by R. H. Rulison entitled "The Prophylaxis of Roentgen-Ray Overdosage," published in The Journal, Nov. 8, 1924.

Rulison's patient was a woman instead of a man, as quoted by us. The roentgen ray was applied through a one inch aperture in a lead screen. We stated that a very small area of skin had been irradiated. The ultraviolet ray was of a strength sufficient to cause a slight erythema after four daily exposures. We stated that the roentgen-ray treatment was followed by very vigorous treatment with the Kromayer lamp.

Rulison estimated the dose of roentgen rays administered to his patient as 4⅓ units. We stated that several times the standard unfiltered erythema dose (1 unit) had been administered. We quoted Rulison's factors as $\frac{8 \times 5 \times 3' \; 54''}{10 \times 10}$. They were $\frac{8 \times 5 \times 3' \; 54''}{8 \times 8}$.

We failed to mention the fact that salicylic acid plaster had been applied to the area of skin previous to irradiation.

We inferred and stated that Rulison thought that ultraviolet irradiation had prevented a severe radiodermatitis in his patient. There is no definite statement to this effect in his article.

As a result of the foregoing errors of commission and omission, one might assume that we had questioned Rulison's judgment, ability and accuracy. Such an assumption would be unjust and erroneous. Our article simply represented an attempt to prove that ultraviolet irradiation is of no practical value as a prophylactic against acute radiodermatitis, and the errors herein mentioned are irrelevant to our findings and conclusions.

George M. MacKee, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BURNSIDE'S PURIFICO

To the Editor:—Can you give me any information on Dr. E. E. Burnside's Purifico nos. 1, 2 and 3, manufactured and sold by C. W. Diffin, Ashville, N. Y., and Bridgeburg, Ont.? I have a patient who is in a most pitiful condition, having unbounded confidence in this remedy for the cure of cancer.

Alan Bart Jackson, M.D., Sincoe, Ont.

Answer.—Purifico is a fraud. It comes in the form of three liquids, "No. 1," "No. 2" and "No. 3." "Purifico No. 1," in addition to 10 per cent alcohol with sugar and a small amount of glycerin, contains potassium iodide, cinchona alkaloids, piperine and probably senna. "Purifico No. 2" is essentially the same thing, minus the senna. "Purifico No. 3" contains 14 per cent alcohol, sugars, valerian, piperine and tannic acid. In 1917 the government prosecuted Charles W. Diffin and Pearl Diffin, who were the owners of the Purifico Company, on the charge that their claims that this stuff would cure cancer were fraudulent. These quacks made no attempt to justify their claims, but pleaded guilty and were fined. An abstract of the government's report appears in "Nostrums and Quackery" volume 2. In June, 1924, the United States government went after these fakers with a fraud order and debarred the nostrum from the use of the mails. After Dr. Jackson's inquiry was received, a letter was written to Charles W. Diffin of Ashville, N. Y., asking for particulars about his cure for cancer. A reply came back from one E. S. Loomis, stating that Diffin was now in California and that the Purifico business had been sold to the Chautauqua Chemical Corporation of Ashville, N. Y. A letter was then written to the Chautauqua Chemical Corporation asking for information about the "sure cure for cancer." In due time a reply came from this concern regarding Purifico. The company states: "We do not claim Purifico a specific in any particular disease and do not guarantee to cure." All direct reference to cancer is eliminated from the printed matter that the concern sent. It is obvious, however, that they are still trading on the claims, made for many years, that Purifico is a cure for cancer.

ETHYLENE OR NITROUS OXIDE

To the Editor:—Does ethylene have any particular advantage over nitrous oxide as an anesthetic? I have had considerable experience in administering ether, but do not care to experiment with ethylene. What would you consider the most suitable apparatus for the administration of ethylene to be used in a small hospital, and what would probably be the average cost per hour, using ethylene?

M.D., North Carolina.

Answer.—Ethylene produces greater relaxation than nitrous oxide. Furthermore, much higher percentages of oxygen can be administered with it; therefore, cyanosis during anesthesia is not an accompaniment, as is the case with nitrous oxide. Any gas machine that will deliver nitrous oxide satisfactorily can be used for the administration of ethylene-oxygen. The cost of ethylene is about the same as that of nitrous oxide. According to New and Nonofficial Remedies, the advantages over nitrous oxide are stated to be equally rapid but more pleasant induction, satisfactory relaxation without cyanosis or sweating, and rapid recovery. The disadvantages of ethylene are the odor, which is slightly offensive to some, the inflammability of the gas, and apparently an increased oozing of the wounds during but not after its use.

TREATMENT OF HIGH BLOOD PRESSURE—LIVER EXTRACT

To the Editor:—1. Allow me to ask your opinion in regard to calcium chloride and potassium chloride in the article on the treatment of arterial hypertension abstracted in The Journal, Oct. 31, 1925, p. 1428. What would you consider contraindicated their use? The doses of both the drugs seem enormous. I was a little slow in considering it in practice, awaiting your advice to see whether you consider it perfectly safe to use from 90 to 180 grains a day, as suggested in the article. 2. Is there anything new in the line of liver extract, and what has been accomplished by it? Where can it be procured? By whom is it made? Is it safe?

John W. Crowe, M.D., Washington, D. C.

Answer.—1. Addison and Clark (*Canad. M. A. J.* **15**:913 [Sept.] 1925) used the following prescription:

		Gm. or Cc.
℞	*Calcium chloride*	60
	Compound tincture of cardamom	30
	Syrup to make	240

Mix. Label: From 2 to 4 drachms in water three times daily after meals.

If at the end of a month's time no fall in pressure occurred, potassium chloride was substituted for the calcium chloride in the same dose. Of forty-five cases of high blood pressure, the pressure was reduced in 57.7 per cent by calcium chloride and in 13 per cent by potassium chloride. The main objections to giving calcium chloride in these doses are the gastro-intestinal disturbances liable to be produced. These are minimized by giving the dose after meals freely diluted with water and followed by a glass of milk. Another objection is the liability of causing an acidosis with calcium chloride. Acidosis does not occur from potassium chloride. While the doses are large, no harm is likely to result, if they are given with proper precautions.

2. Liver extract was discussed in The Journal, July 18, 1925, page 194, and "The Effects of Hepatic Extract on High Blood Pressure" by Ralph H. Major, July 25, 1925, page 251. No liver extract has been accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies, and, so far as we know, liver extracts are not generally available in this country.

AIR EMBOLISM

To the Editor:—A man, quarreling with a woman, stabbed her with a knife; it entered the fifth intercostal space and perforated the heart in the right ventricle. The necropsy showed frothy blood in the mediastinum; the heart was empty and the pericardium was full of blood. When we opened the skull, all the arteries of the brain were full of air. How do you account for that?

Thomas Gäerste, M.D., Curaçao, Dutch West Indies.

Answer.—If the necropsy was made some time after death and if the body in the meantime had been lying in a warm place, it is possible that the gas resulted from bacterial action after death. On the other hand, if the necropsy was made soon after death under circumstances precluding bacterial gas production, the air in the arteries of the brain must have been the product of air embolism. The fact that there was frothy blood in the mediastinum suggests at once that the lung was cut by the knife and that air escaping into the mediastinum produced traumatic emphysema; from the cut in the lung, air may have entered branches of the pulmonary veins and thence the systemic circulation. This would be the only obvious route unless perchance the stab in the right ventricle had perforated also the wall of the left ventricle, thus making it possible for air in the mediastinum to be forced directly into the left side of the heart.

DWARF TAPEWORM

To the Editor:—I should like to have the latest information and treatment for dwarf tapeworm. I have used male fern after the usual text book method, but find that the ova persist in a number of cases treated. Please use initials.

E. E., M.D., South Carolina.

Answer.—Failure of one course of treatment in infestation with these worms is not surprising; this condition usually requires periodic repetition of treatment in progressively increasing strength. The gastro-intestinal tract should be emptied as much as possible by confining the patient to a clear liquid diet (coffee, soup, lemonade) for a day or two, together with the administration of calomel and saline cathartics. There is no objection to giving the patient on the morning of the treatment, from half an hour to an hour before its administration, a cup of sweetened coffee. Doses of 6 to 8 and not more than 10 Gm. of oleoresin of aspidium may be safely administered to a well nourished adult, probably best in the form of capsules, 1 Gm. being given every five or ten minutes until the entire dose is taken. One or two hours after this, a laxative, such as magnesium sulphate, is to be administered. Scrupulous personal cleanliness so as to avoid reinfestation should also be insisted on.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.

California: Los Angeles, March 8-11. Sec., Dr. Charles B. Pinkham, Room 906, Forum Bldg., Sacramento.

Connecticut: Basic Science Board, New Haven, Feb. 13. Chairman, Mr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, Hartford, March 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Board, New Haven, March 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Kansas: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

Maine: Portland, March 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Massachusetts: Boston, March 9-11. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

Missouri: Jefferson City, March 9-11. Chief, Licensure, Dr. Ross Hopkins, Capitol Bldg., Jefferson City, Mo.

National Board of Medical Examiners: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

New Hampshire: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

Oklahoma: Oklahoma City, March 9-10. Sec., Dr. J. M. Byrum, Shawnee.

Philippine Islands: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

Porto Rico: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.

Vermont: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

Wyoming: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

North Carolina June Examination

Dr. K. P. B. Bonner, secretary of the North Carolina Board of Medical Examiners, reports the written examination held at Raleigh, June 22-27, 1925. The examination covered 16 subjects and included 70 questions. An average of 80 per cent was required to pass. Of the 81 candidates examined, 80 passed and 1 failed. Eighteen candidates were licensed by reciprocity and 1 by endorsement of his credentials. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
College of Medical Evangelists	(1923)	85.7
Georgetown University School of Medicine	(1925)	85.6
Howard University School of Medicine	(1924)	88.9
	(1925)	80.1, 86.9, 87.3, 88
University of Georgia Medical Department	(1924)	86.4
University of Illinois College of Medicine	(1923)	85.3
Tulane University of Louisiana School of Medicine	(1925)	89
Johns Hopkins University Medical Department	(1923)	89.4
University of Maryland School of Medicine	(1921)	83.6,
	(1924)	83.7, 87.3,
	(1925)	82.1, 85.9, 86.9, 87.1, 87.7, 88.1, 88.3, 88.9, 89.6
Ohio State University College of Medicine	(1922)	88.6
University of Cincinnati College of Medicine	(1925)	89.6, 91.9, 91.9
Jefferson Medical College of Philadelphia	(1923)	92
	(1925)	85.3, 85.4, 85.9, 86, 86.6, 87.4, 87.9, 88.9, 89.6, 91, 91.3, 93.4
University of Pennsylvania School of Medicine	(1923)	85.4,
	(1924)	88.1, 90.6,
	(1925)	86.9, 87, 88, 88.4, 88.7, 89, 89.3, 90, 91.4, 92, 94.7
University of Pittsburgh School of Medicine	(1923)	85.4
Medical College of the State of So. Carolina	(1925)	83.4, 84, 88.3
Meharry Medical College	(1924)	83.6,
	(1925)	82.4
Vanderbilt University School of Medicine	(1925)	82.3, 84.4
Baylor University College of Medicine	(1925)	85.6
Medical College of Virginia	(1925)	80.7, 84.1, 85, 85.3, 86.1, 86.3, 87.3, 88.7, 91.4, 91.6, 92
University of Virginia Department of Medicine	(1924)	87.7,
	(1925)	85.9, 86.9, 88.3, 90.6

FAILED

College	Year Grad.	Per Cent
Ohio State University College of Medicine	(1923)	76.6

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University School of Medicine	(1920)	Dist. Colum.
Atlanta School of Medicine	(1909)	Georgia
Emory University School of Medicine	(1920)	Georgia
Indiana University School of Medicine	(1913)	Indiana
University of Louisville School of Medicine	(1910)	Kentucky
University of Maryland School of Medicine	(1911)	S. Carolina
University of Michigan Medical School	(1899), (1908)	Michigan
Columbia University College of Medicine	(1919)	New York
Western Reserve University School of Medicine	(1920)	Ohio
Medico-Chirurgical College of Philadelphia	(1916)	Penna.
Medical Coll. of the State of South Carolina	(1911), (1915)	S. Carolina
University of the South Medical Department	(1900)	S. Carolina
Vanderbilt University School of Medicine	(1919)	Tennessee
Medical College of Virginia	(1916) So. Car., (1919), (1920)	Virginia

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
University of Pennsylvania School of Medicine	(1922)	N. B. M. Ex.

Book Notices

Skull Fractures: Roentgenologically Considered. By William H. Stewart, M.D., Roentgenologist to the Lenox Hill and Harlem Hospitals, New York City. With Surgical Comments by William H. Luckett, M.D., Directing Surgeon, Lutheran Hospital. Annals of Roentgenology. Volume six. Cloth. Price, $12. Pp. 264, with 132 illustrations. New York: Paul B. Hoeber, Inc., 1925.

In this volume the author presents a series of master roentgenograms of the skull. One group depicts all the normal markings of the frontal, lateral, occipital and basilar regions. Another group represents the various types of fracture, both fissured and depressed. Together, they supply a diagnostic guide for the roentgenologist as well as the surgeon, which he may use either as a study in injuries to the head or for comparison with an individual case of a similar nature. A careful study of these plates will be of immense help in differentiating between a fracture line and a normal skull marking. Because of the difficulty of detecting a fracture line in the skull, the author states that four or five views are necessary—two lateral, one of each side, a frontal and an occipital; and a fifth view of the base, if one has perfected that technic. Besides these flat views, a stereoscopic examination should also be made. With this painstaking examination, from 80 to 90 per cent of all fractures of the skull can be detected. A chapter is devoted to the roentgenographic technic. Careful directions are given by the author as to the position of the patient on the table, method of fixation of the head, location of the tube, spark gap, use of the Potter-Bucky diaphragm, and time exposure. The technic as to these details is well shown by photographic illustrations. Another chapter is devoted to the examination of the skull with the portable apparatus for patients that are in desperate condition in the home or in the hospital when it is inadvisable to move them. Another important chapter deals with the interpretation of roentgenograms of the skull, differentiating natural markings, such as suture lines, ridges, sinuses, fissures and diploetic spaces. A number of good illustrations present unusual venous markings from which fracture lines and the effect of increased intracranial tension must be differentiated. Finally, there is a discussion of the time factor in the disappearance of roentgenographic evidence in fractured skulls that is important in medicolegal work. How long does a fissured fracture show in a roentgenogram? The author states that in simple fissure in children the evidence of fracture may disappear within six months, and cites three cases in evidence. In the adult, simple linear fracture lines may remain visible for three years. On the other hand, a hypertrophic osteitis may occur along the fracture line, and this may be rendered more distinct as time goes on. In cases in which there has been much separation of the fragments, as in diastatic fracture, it would be safe to say that they could be detected as long as five years after the accident. Depressed fractures, of course, are permanent, unless the depression is corrected by operation. If this were all that is included in the book, little of criticism and much of commendation would be in order. But in a chapter on surgical comments and in suggestions as to diagnosis and surgical treatment that are present throughout the volume, the author lays too much stress on fracture of the skull and not enough emphasis on injuries to the brain and meninges. In practically all fissured fractures, and these are the most common, the injury to the brain must be diagnosticated as soon as possible by procedures other than roentgenographic, especially lumbar puncture. With this in mind, one will find the book a helpful guide.

Simplifying Motherhood. Being a Handbook on the Care of the Baby During the First Year. By Frank Howard Richardson, A.B., M.D., Regional Consultant in Diseases of Children to the New York State Department of Health. Containing a Chapter on Breast Feeding. By Isaac A. Abt, Professor of Diseases of Children, Northwestern University Medical School. Cloth. Price, $1.75. Pp. 263, with illustrations. New York: G. P. Putnam's Sons, 1925.

This is a satisfactory book for mothers and for every one who has the care of babes. It is not encumbered with dogma and undemonstrable theories, but the sensible and practical management of the child is insisted on. It would seem that the rule requiring the babe to empty completely one breast at each nursing, no matter how long it takes, should be modified, since some breasts are so uberous that several infants could be fed and yet a considerable residue would remain. The nursling can easily get his fill in twenty minutes if he is hungry, and the mother would have a longer period of rest. The only theory advocated in and out of season is that every healthy mother can be made to nurse her babe. Although the desirability of this is admitted, yet it certainly must happen that many women with high purpose and exacting industry will fail. Some breasts are large and fat but contain apparently small or inactive glands that will not or do not respond to stimulation. These breasts are the despair of the pediatrician, and apparently no augmentation of rest and food produces an appreciable change. It would be delightful to learn that the author's thesis would prove true in these cases. The mother, the nurse or the special student will find a wealth of information in this little volume.

Etudes neurologiques. Par Georges Guillain, Professeur de clinique des maladies du système nerveux a la Faculté de médecine de Paris. Second edition. Paper. Price, 26 francs. Pp. 360, with 52 illustrations. Paris: Masson et Cie, 1925.

This volume constitutes the second series of neurologic studies, the first of which, published in 1922, has been exhausted. Some of the headings under which articles appear are: symptomatology; pathology of brain and spinal cord; multiple sclerosis; secondary degenerations; epidemic encephalitis; syndromes of postencephalitic parkinsonism, and Parkinson's disease. The cases forming the basis for these articles were presented before medical societies or were reported in medical bulletins and journals. The author collected these case reports and has carefully edited and arranged them under appropriate headings, thus saving the reader's energies in looking for them in separate journals. The articles are brief and concise, strongly reminding one of the several Leçons published in France since Charcot issued his celebrated Leçons du Mardi, based on the lectures he delivered Tuesdays at the Salpêtrière. This species of medical writing has become quite popular in France and has found many imitators in other countries. It must be admitted that this is an easy way of acquiring information on clinical subjects—a so-called postgraduate course by letters. Especially is this true for the study of neurology, a specialty in which one has to think in terms of anatomy and physiology, subjects which are rather dry when studied apart from clinical neurology. The author has not only succeeded in making anatomy and physiology interesting, but he has also included in this feat chemistry and physics, as well as the other medical specialties, provided he needed them to throw more light on the case under discussion. Several new reflexes, first discovered by the author, are described; these have not yet found a place in modern textbooks. Some excellent descriptions of the pathologic anatomy of the brains and cords in cases that have been well studied during life are given. This book can be appreciated by both the neurologist and the general practitioner.

Miscellany

COMMITTEE REPORT ON ETHYL GASOLINE

The Special Advisory Committee, appointed by Surg. Gen. Hugh S. Cumming to determine whether or not there is a public health hazard involved in the manufacture and use of tetra-ethyl lead gasoline, has made public its report, which shows that "there are at present no good grounds for prohibiting the use of ethyl gasoline as a motor fuel, provided that its distribution and use are controlled by proper regulations." The report was the unanimous action of the committee, composed of Dr. W. H. Howell, chairman, of Johns Hopkins University; Dr. David Edsall, dean of the School of Public Health of Harvard University; Prof. C.-E. A. Winslow of Yale University; Dr. W. S. Leathers of Vanderbilt University; Dr. A. J. Chesley, state health officer of Minnesota; Dr. Julius Stieglitz of the University of Chicago, and Prof. Reid Hunt of Harvard University. The actual conduct of the work was entrusted to Dr. J. P. Leake, Surgeon, U. S. Public Health Service. The committee was appointed as a result of a conference called by Surgeon General Cumming, May 20, 1925. As a result of that conference the manufacturers of ethyl gasoline stopped the sale of gasoline throughout the country. More than 300,000,000 gallons of gasoline had been distributed from February, 1923, to May, 1925. Serious cases of poisoning occurred in New Jersey and Ohio at plants where tetra-ethyl gasoline was manufactured.

The following three general conclusions are offered:

1. Drivers of cars using ethyl gasoline as a fuel, and in which the concentration of tetra-ethyl lead was not greater than 1 part to 1,500 parts by volume of gasoline, showed no definite signs of lead absorption after exposures approximating two years.

2. Employees of garages engaged in the handling and repairing of automobiles and employees of automobile service stations may show evidence of lead absorption and storage, as indicated by the lead content of the feces and the appearance of stippled cells in the blood. In garages and stations in which ethyl gasoline was used, the amount of apparent absorption and storage was somewhat increased, but the effect was slight in comparison with that shown by workers in other industries when there was a severe lead hazard, and for the periods of exposures studied was not sufficient to produce detectable symptoms of lead poisoning.

3. In the regions in which ethyl gasoline has been used to the greatest extent as a motor fuel for a period of between two and three years, no definite cases have been discovered of recognizable lead poisoning or other disease resulting from the use of ethyl gasoline.

So far as could be ascertained, all the reported fatalities and serious injuries in connection with the use of tetra-ethyl lead have occurred either in the process of manufacture or in the procedures of blending and ethylizing. Some lead was present in the air of the garages and work rooms whether the gasoline used contained lead or not; and in the sweepings of dust from the floors and benches there was a distinct amount of lead present, the figures running from 0.82 to 22.31 mg. per gram of dust, according to the time and place of gathering the sample. This emphasizes the importance of providing such rooms with adequate ventilation, and of keeping both floors and benches as free as possible from dust. Owing to the incompleteness of the data, it is not possible to say definitely whether the exposure to lead dust was greater in garages in which ethyl gasoline was used.

In closing, the committee states that, although based on most careful and conscientious investigations, its findings may be subject to the criticism that they have been derived from the study of a relatively small number of individuals who were exposed to the effects of ethyl gasoline for a period of time comparatively brief. A more extensive study was not possible on account of the limited time. With the experience obtained and the exact methods now available, it should be possible to follow closely the outcome of more extended use of this fuel and to determine whether or not it may constitute a menace to the public health after prolonged use or under conditions not now foreseen. The committee urges that a suitable appropriation be requested from Congress for the continuance of these investigations under the supervision of the Surgeon General of the Public Health Service, and for a study of related problems connected with the use of motor fuels.

UNIFORM NARCOTIC DRUG ACT

"The committee having this matter in charge reported that it had had the benefit of the suggestions of the Bureau of Legal Medicine and Legislation of the American Medical Association, and it presented an act for consideration at this time, though it requested that it be referred back to the committee for further consideration, which was done. In the draft submitted no provision was made for the supervision and control of the addict, which many believe is an important part of any legislation of this kind. As a result of criticism of this omission, it is likely that there will be submitted as a supplementary act, at least to be adopted by those states which desire to do so, an act for the supervision and control of addicts."—MacChesney, N. W.: Progress on Uniform State Laws, *Am. Bar Association J.* **11**:808 (Dec.) 1925.

Medicolegal

Chiropractic and the Illinois Medical Practice Act

(People v. Walder (Ill.), 148 N. E. R. 287)

The Supreme Court of Illinois, in affirming a judgment of conviction of the defendant of violating the medical practice act, for which he was adjudged to pay a fine of $300, says that the offense for which he was prosecuted being the treating of human ailments without a license so to do, and not the treating of the ailments of any particular person, it was unnecessary to name in the indictment the persons treated. The defendant's objection to the validity of the medical practice act that the practice of chiropractic is a useful and harmless calling, which cannot be regulated by the state, was so clearly without merit that discussion of the question seems unnecessary. If a chiropractor can, by manipulation, move a dislocated vertebra so that the pressure on a nerve will be relieved and paralysis cured, he can by the same process dislocate a vertebra and cause a paralyzed condition. Any method of treating human ailments which, when practiced skilfully, can restore a diseased human body to health is capable of doing great harm when practiced without care or skill. A method of treating human ailments cannot be both useful and harmless. If it is sufficiently efficacious to be useful, it is at the same time capable of producing harmful results.

It was contended that the requirement that twenty-two months shall elapse between the time the student begins his eighteen months' course of study and the time he finishes his course is arbitrary and unreasonable. That portion of section 5 of the medical practice act of Illinois of 1923 applicable to the defendant requires that he shall pursue the studies necessary to fit him to practice chiropractic in a recognized college for three school years of not less than six months each. It is a usual provision in acts or rules governing the time during which studies shall be pursued for the securing of a professional education that a certain period of time elapse between the ending of one school year and the beginning of the next succeeding school year. It is generally conceded that it is proper for the legislature to prescribe minimum requirements of education for admission to examination for the purpose of securing a license to treat human ailments, and it is the province of the legislature to determine in the first instance how much time shall elapse between the time of beginning and the time of concluding the prescribed course of study. In making this requirement, the legislature must have in mind that the public should be protected from persons who do not have the necessary knowledge to treat human ailments. Every person may have occasion to consult a physician, but comparatively few persons can judge the qualifications of learning and skill which he possesses.

Any person who professes to practice any system of treating human ailments has to deal with those mysterious influences on which health and life depend, and no person can claim the right to enter that profession who does not have a knowledge of the human body, its complicated parts and their relation to each other, and a knowledge of the effect on the human body of substances which might cause sickness or destroy life. Whatever method of treating human ailments is used by a physician, he should be able to detect readily the presence of disease and prescribe appropriate remedies for its removal. Taking into consideration the subject-matter with which the legislature was dealing, this court is of the opinion that the requirements applicable to the limited practitioner are not subject to the charge of being arbitrary and unreasonable, but that they are liberal when compared with the requirements of the same act applicable to persons who desire to practice medicine in all its branches. The medical practice act of 1923 recognizes the different methods of treating human ailments, and prescribes reasonable and uniform regulations for testing the qualifications of persons who desire to practice medicine in all its branches, and of persons who desire to practice some limited form of treating human ailments. This act meets the constitutional objections which rendered void the earlier medical practice acts, and is valid legislation.

That there is a valid basis for exempting the officers of the medical corps of the army, the navy and the Public Health Service of the United States from the operation of the act is apparent. The competence of these physicians is assured by the exactions required of them before they can become commissioned in the service of the United States.

Unskilful Treatment Not an Issue in Injury Case

(O'Quinn v. Alston (Ala.), 104 So. R. 653)

The Supreme Court of Alabama holds that in this action to recover damages for personal injuries alleged to have been caused by the negligence of the defendant it was reversible error to permit his counsel to ask physicians questions which tended to support his theory that the plaintiff's injury had not been skilfully treated by his surgeon—that a part of his hand had been needlessly amputated, and thereby his injury needlessly and negligently aggravated. The information sought and obtained by these questions was not admissible, either in defense or as a matter of mitigation. They did not tend to show that the plaintiff had failed to exercise reasonable diligence in the selection of his surgeon, or that he had been negligent in caring for his own wound, or the intervention of any independent cause other than the alleged unskilful treatment by his surgeon. Nor was any evidence offered during the trial tending to establish any of these things. So then the only possible theory on which these questions were allowed was that the defendant was not answerable for the full measure of the plaintiff's injury and consequent suffering, if these had been aggravated by the unskilful treatment of his surgeon. This was error. In the circumstances stated, the defendant's negligence was the proximate cause of the plaintiff's injury to its full extent, and should have been so treated by the trial judge in his rulings; for, when one is injured by the negligent or wrongful act of another, and uses ordinary care in endeavoring to be healed and in the selection of medical and surgical help, but his injury is aggravated by the negligence or unskilfulness of the latter, the party causing the original injury will be responsible for the resulting damage to its full extent. Briefly stated, with reference to the facts of this case, various authorities show the reasons for the rule to be that the employment of a surgeon is to be regarded as a natural consequence of the defendant's wrong, because the necessity for such employment was imposed on the plaintiff by the defendant's fault, and because the plaintiff, an unprofessional person, did all he could do, or at least in the conditions obtaining what he had a right to do, when he employed a surgeon to treat and heal his injury, and the surgeon's mistake, if mistake there was, could not be regarded as negligence on the part of the plaintiff, or as an intervening cause. True, there was evidence that the plaintiff requested his surgeon to "take the finger off"; but, on the testimony of the plaintiff and his surgeon, there was no doubt that his surgeon amputated the finger and a part of the hand because, in his judgment, there was no other way of relieving the pain which up to that time the plaintiff had constantly suffered. The surgeon may have blundered; but no reason appeared why the plaintiff should be held responsible. It was competent, of course, for the defendant to show that the plaintiff's physical condition had not been impaired to the extent claimed, but that was not the purpose or effect of the testimony in question.

Appearance and Acts as Evidence of Mental Condition

(Bell et al. v. Blackwell et al. (Texas), 273 S. W. R. 866)

The Court of Civil Appeals of Texas, in affirming a judgment admitting a will to probate, says that it thinks it is well settled that a person who knew the maker of a will intimately for a long time, with full opportunity to observe his appearance, action and conduct, may not only state those things which to the witness would indicate a change in the testator's mental condition for the worse, but, to show soundness of mind, may also state the converse; that is, that there had been no change in his mental condition during the acquaintance of the witness with him.

Insanity or unsoundness of mind, according to the authorities, may be shown by mere appearances and by proof of acts and conduct out of the ordinary, which, to a person of ordinary intelligence, would indicate an abnormal state of mind, insanity or unsoundness of mind. These matters may be easily shown by the appearance, acts and conduct of the person; but to prove that one is of sound mind, just the reverse is true. To prove that one is of sound mind, it is necessary to show only that he is not known to be guilty of any acts or conduct which would indicate to a man of ordinary intelligence that his mind is unsound. The absence of acts and conduct indicating that one's mind is abnormal, and the absence of appearances indicating that such person is in an abnormal state of mind, is [furnish] the only way in which such person can be shown to be of sound mind.

It may be very difficult, if practical at all, to give the reasons for knowing or believing that one with whom one has been closely associated for a long time is sane or insane, of sound mind or of unsound mind, just as it would be difficult to tell how a person's appearance indicates distress, mortification or joy, or to tell how the person of a friend is recognized. Still, people are found to be in the daily habit of acting in important matters on judgments so formed. Judgments so formed are grounds for an opinion or conclusion or judgment, which may be testified to in the courts.

It was not reversible error in this case for the trial court to instruct the jury that if the testatrix had the capacity to know and understand what she was doing, and the effect of her act at the time she executed the instrument offered for probate, her mind was sound; if she did not have it, her mind was unsound.

Damages Allowed for Miscarriage Caused by Fright

(Hanford v. Omaha & C. B. St. Ry. Co. (Neb.), 203 N. W. R. 643)

The Supreme Court of Nebraska, in affirming a judgment for $2,000 damages in favor of the plaintiff, holds that where a pregnant woman is placed in a position of reasonably apprehended peril by the negligence of one owing her a legal duty, and suffers a miscarriage as the proximate result of shock and fright produced by such negligence, she may recover damages from the wrongdoer. In this case, in which the plaintiff, standing within a few feet of the track on which two of the defendant's cars collided, was greatly frightened thereby and jumped back, immediately felt sick, and three days later suffered a miscarriage, she was entitled to recover damages whether her injuries resulted from the jump backward or solely from the fright. This court does not deem it a logical deduction that because there can be no recovery for mere fright, therefore there can be none for the consequences of fright. Because in the one case it is not possible to prove legal damage furnishes no reason for denying damages when they may be proved. The jury was properly instructed that it should not allow any damages for the death of the unborn child, or mental suffering, sorrow, or regret thereby occasioned the plaintiff.

Admissibility in Evidence of Hospital Record

(Kimber v. Kimber et al. (Ill.), 148 N. E. R. 293)

The Supreme Court of Illinois, in affirming a decree setting aside an alleged will on the grounds of want of testimentary capacity and undue influence, says that the trial court admitted in evidence a certain hospital record, which appellants insisted was incompetent, because some of the notations on it were made by interns and nurses, and not by the physician who testified concerning the record at the time it was offered. Such a record is admissible on the same basis as books of account, and before it can be admitted in evidence all persons who make entries in it are required to testify to their correctness. This court examined the hospital record as it appeared in the transcript of the record of this cause, and found that it contained memoranda relating to the physical condition, the findings from tests made, and a statement of the medical treatment given the patient. Some of the data set forth in the hospital record were included in the testimony of the physicians, and the rest related to matters that could not be prejudicial. The appellants had not shown wherein they were prejudiced by the admission of this record, and their contention with respect to it could not be sustained.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

WESTERN SURGICAL ASSOCIATION

Thirty-Fifth Annual Meeting, held at Wichita, Kan., Dec. 18-19, 1925

The President, Dr. Willard D. Haines, Cincinnati,
in the Chair

Some Surgical Experiences with Thrombo-Angiitis Obliterans

Dr. C. C. Nesselrode, Kansas City, Kan.: The Leriche operation has been too promiscuously used and rests on a questionable foundation. To meet adequately the condition present in the group of presenile gangrene cases, one must recognize a diminishing group fitting the general description laid down by Raynaud, and an ever increasing group, the pathology of which has been made clear by Buerger and Rabinowitz. The vast majority of patients belonging to the latter group will ultimately face the question of amputation, but in the early stages one may practice palliative measures based on an effort either to increase the adequacy of the circulation to the part, or to change the chemical components of the blood. When one faces the issue of amputation, anything that will aid in the selection of a site for amputation is to be encouraged. In my experience the determination of the circulatory angle, as described by Buerger, and the visualization of the vascular tree, as described by Brooks, have been the two most valuable aids.

"Tenosuspension" for Habitual Dislocation of Shoulder

Dr. Melvin S. Henderson, Rochester, Minn.: Five years ago I reported nineteen cases of recurring or habitual dislocation of the shoulder joint in which operation had been performed. Since that time the operation has been performed in ten additional cases. In my experience, capsulorrhaphy and the various plastic muscle operations have not resulted in cure as often as the patients have a right to expect. I believe that the results of the operation of "tenosuspension" will more nearly approach the percentage of cures that should be expected. There have been no recurrences in these thirty cases. Twenty-two months is the longest time since the operation.

Relation of Hyperthyroidism to Diabetes and Certain Other Pathologic States

DR. FREDERICK G. DYAS, Chicago: Diabetes and hyperthyroidism are on the increase. Hyperglycemia and glycosuria should be considered not alone from the standpoint of pathology of the pancreas but also in relation to the ductless glands. Since the medical treatment of hyperglycemia is diametrically opposed to that of hyperthyroidism, it is necessary to dispose of hyperthyroidism surgically before proper dietetic treatment for hyperglycemia can be instituted in most cases. The results thus far reported justify thyroidectomy in properly selected cases of hyperthyroidism and hyperglycemia and glycosuria.

Periduodenitis

DR. E. P. QUAIN, Bismarck, N. D.: Duodenojejunostomy for periduodenitis by transmesocolic methods has been done by me on nine patients. The outstanding symptoms in all these cases were headaches, epigastric pain after meals, nausea and emesis. Medical, postural and dietetic treatments were tried in all cases before operation was advised. Although the first operation was performed only fifteen months ago, the results to date have been highly satisfactory. The younger patients have been relieved of their symptoms through operation much more promptly and definitely than those near the age of 40. Sensations of nausea and fulness after meals were not entirely removed in some of the older patients. It seems that after the duodenum has practiced antiperistalsis for many years it becomes increasingly difficult to quit the habit, even if there be no apparent exciting cause present. The fluoroscope has shown in such cases that the sensation of nausea and epigastric distress corresponds to the time of the duodenal antiperistalsic waves, the same as it does before operation.

Gastric and Duodenal Ulcer, with Report of an Unusual Case

DR. A. E. BENJAMIN, Minneapolis: We still have much to learn about the cause of gastric and duodenal ulcer, and our method of treatment will, perhaps, be greatly modified when we have found the real reason for their development. With our present knowledge, we must encourage patients to have all possible foci of infection removed or treated. We must learn to recognize earlier the symptoms that lead to ulcer, and overcome them, if possible. Patients should be instructed to regard any unusual gastro-intestinal symptoms more carefully, and give the physician a chance to prevent a serious result. The internist and the surgeon should cooperate and observe more strictly their individual field of usefulness in the management of gastric or duodenal ulcer.

Carcinoma of the Stomach

DR. DONALD C. BALFOUR, Rochester, Minn.: Recent experiences with the preoperative preparation of patients with carcinoma of the stomach have convinced me that all patients for whom operation is contemplated should be observed in hospital before operation. This is especially important in cases of marked pyloric obstruction and gastric retention. For carcinoma of the stomach, the best types of resection are those in which restoration of gastro-intestinal continuity is by union between the stomach and the jejunum. For some time I have been performing either the Polya operation or the anterior anastomosis with entero-anastomosis. In my recent cases of partial gastrectomy for carcinoma I have found it advisable to perform anterior end-to-end anastomosis combined with entero-anastomosis in about 50 per cent. The safety of partial gastrectomy depends on the general principles of good mobilization, freedom from tension at the site of anastomosis, absolute hemostasis, independent ligation of blood vessels, evacuation of the stomach early in the operation so that the field contains a collapsed organ rather than a ballooned one, lavage of the whole operative field with physiologic sodium chloride solution, and the greatest possible protection of all suture lines by omentum. In the after-care, rest is the chief requisite. The mortality depends largely on the operability rate. The lesion is operable in about 25 per cent of the patients who come to the clinic with carcinoma of the stomach. Pneumonia and peritonitis are responsible for 75 per cent of the deaths that occur following operation for carcinoma of the stomach. It is difficult to keep the mortality rate under 10 per cent, but a mortality rate of 5 per cent would be possible if a careful selection of cases were made. This would result in denying some patients a chance for cure, and certainly in cases of carcinoma of the stomach the primary mortality rate should not govern the indications for operation. The percentage of patients cured depends on the character of the disease, the type of carcinoma and the extent of the lymph node involvement. When the nodes were not affected, the percentage of patients well and free of evidence of recurrence at the end of three years was 52.5. In the more unfavorable type, the percentage dropped to 18.

Results of Hypoglossofacial Anastomosis for Facial Paralysis

DR. ALFRED BROWN, Omaha: Judging by the results in two cases, it seems fair to assume that this operation will not only restore facial symmetry and voluntary motion to the facial muscles, but also bring about the return of a certain amount of emotional expression, the amount depending largely on the mental development of the patient.

Extrapleural Thoracoplasty

DR. ARTHUR A. LAW, Minneapolis: The operation of extrapleural thoracoplasty is a formidable major proceeding, particularly because it is performed on a patient already weakened and depleted by the ravages of his disease. In spite of its severity, the primary operative mortality is only 1.5 per cent, while the secondary mortality of 12 per cent within six weeks, from causes indirectly connected with the operation, is low in view of the type of patients presented. My own series of fifty-four operations performed on thirty different patients shows an immediate operative mortality of only one case, the single instance in which all the ribs were removed at one sitting; there was a futher loss of five patients in from seventeen days to five months after operation, from causes directly attributable to the operation or from the disease itself, all cases in which the first stage only of the operation had been done. Alexander, from his study of operative cases all over the world, found that the apparently cured and clinically cured cases averaged 38.8 per cent, and that the improved cases averaged 24.4 per cent, a total of 61.2 per cent cured or improved.

Wolffian Cysts in Men and Women Arising in Relation To the Testis and Ovary

DR. ROWLAND H. HARRIS, Battle Creek, Mich.: Of eleven cases of paratesticular cysts, four were multiple and seven single. They occurred within the cavity of the tunica vaginalis in two cases; on the right side in three cases; on the left side in six, and on both sides in two. Twice there was associated indirect inguinal hernia; four times there was accompanying hydrocele, and five times there was neither hernia nor hydrocele. There was no observable relationship between the cysts and any antecedent gonorrheal infection. There were seven operative cases of parovarian cyst. The cysts were all free from adhesions, and in only one case was there associated inflammation of the fallopian tube. In none of the cases did the cyst burrow deeply into the broad ligament. The cysts were on the right in four cases and on the left in three. They varied in size from 30 to 8,000 cc.

A Method of Preventing Skin Excoriation in Intestinal Fistulas

DRS. JOSEPH F. SMITH and H. H. CHRISTENSEN, Wausau, Wis.: Patients with small bowel fistulas can be made comfortable at once by the application of a kaolin-glycerin dressing to the skin, a sufficient quantity of sterilized powdered kaolin being mixed with glycerin to make a thin paste. This is applied to the body surface surrounding the wound. Over this we spread a generous quantity of powdered kaolin to absorb the escaping fluids. This, in turn, is covered with the usual dressings. Charcoal was used at times for the powdered portion of the dressing, but because of its disagreeable color it is objectionable. These applications have been sufficient to keep the patient comfortable for from five to six hours. As the fistulas have contracted, two applications in twenty-four hours have been adequate. Patients with extensive skin excoriation may be controlled to the extent that the skin and other tissues about the fistula may be restored to a condition that will permit a surgical repair to be carried out.

Acute Appendicitis: A Study of Six Hundred Consecutive Cases

Dr. H. K. Wallace, St. Joseph, Mo.: From our study we cannot see that age makes any difference, except that in childhood the symptoms are a little less definite and the disease seems to progress more rapidly. The mortality rate was practically the same for children as for adults. Purgation is the outstanding cause for the high mortality in acute appendicitis. Operation should be performed as soon as possible after the diagnosis has been made. We can see no advantage in the Ochsner method of waiting for localization. The operation should be attempted only by a competent and well trained surgeon. In the perforated cases careful drainage should be done to prevent changing a localized peritonitis into a general one.

Effect of Jejunostomy on Experimental High Intestinal Obstruction

Drs. Thomas G. Orr and Russell L. Hayden, Kansas City, Kan.: Experimental jejunostomy in the dog has no beneficial effect. The evidence seems to indicate that life may be shortened by jejunostomy. The operation has no inhibiting effect on the changes in blood chemistry. Treatment of jejunal obstruction with sodium chloride tends to prolong the life of animals, regardless of jejunostomy. There is no information available to explain the difference in results between experimental and clinical jejunostomy.

Chronic Intestinal Obstruction

Dr. Charles D. Lockwood, Pasadena, Calif.: Cases of long-standing intestinal obstruction, with extensive immobilizing adhesions, are best treated by radical excision of all affected bowel up to 8 feet of small intestine. If the obstruction is complete at the time of operation and the patient toxic, no attempt should be made at radical resection but free intestinal drainage secured. An enterostomy above the site of anastomosis is essential, no matter how skilfully the operation may have been done.

Cause of Postoperative Rupture of Abdominal Incisions

Dr. Leonard Freeman, Denver: As an explanation for the postoperative rupture of abdominal wounds, the hypothesis is offered that it results from an inadequate closure of the peritoneum. The omentum forces itself between the loose stitches, and in swelling acts as an expanding wedge which forces the tissues apart and prevents proper union. This process is aided by serous exudation and precipitated by the strain of vomiting and distention. Massive adhesions and many postoperative hernias are similarly explained by subcutaneous wound rupture, which is much more common than complete wound rupture.

Elusive Ulcer of the Bladder

Dr. Herman L. Kretschmer, Chicago: In a previous report, the percentage of cures in eleven cases treated by open operation was given as 75, and the recurrences 25. As time went on and the cases were kept under observation, the percentage of cures became smaller. It is apparent that the percentage of cures after so formidable an operation is relatively low and the percentage of recurrences very high. The percentage of cures in this group was 50, the recurrences 40 and improvement 10. In a group of twenty-four cases treated only by fulguration through the cystoscope, six patients are free from all types of urinary distress; sixteen are sufficiently improved to be satisfied with the results and cannot see the need for further observation or treatment. The intervention of an acute cold, grip or a gastro-intestinal upset may result in an immediate recurrence of some of the symptoms. One patient is under treatment and one has been lost sight of. At first sight, it appears that fulguration should be the treatment of choice, because the percentage of improvement in our series was large. When it is remembered that some of these patients have an aggravation of their symptoms consequent on such slight provocation as an intercurrent infection or fatigue, it would appear that the ultimate results of fulguration are not very gratifying. In several instances, patients improved by means of local treatment other than fulguration. The use of silver nitrate instillations into the bladder gave a good deal of relief, but in no instance was a patient cured.

A Comparison of Postoperative Convalescence After General and Local Anesthesia in Operations in the Upper Abdomen

Dr. J. Tate Mason, Seattle: As a basis for this paper, 100 consecutive upper abdominal operations have been studied in a twelve months period. Fifty operations were performed under ether anesthesia, and fifty under local or local and gas anesthesia. All operations were performed by one surgeon, in the same hospital, with practically no change in the surgical staff or the floor nurses. An average of only eight minutes more was required for each operation under local anesthesia. The average stay in the hospital was three days less for the patients operated on under local anesthesia. Only eighteen of the local anesthetic patients vomited, while thirty-three of the ether anesthetic patients showed this symptom. In the latter the vomiting was more marked and more persistent. Nineteen of the patients receiving a local anesthetic, against thirty of the ether patients, suffered gas pains. Severe shock was experienced only once in this series and mild shock four times, each time after ether anesthesia. Bronchitis developed in eleven patients taking ether and in three after local anesthesia. One patient, aged 59, who had an acute gallbladder inflammation and bilateral pyelitis, developed pneumonia and died eight days after operation under local anesthesia. This was the only death of the series. There was no postoperative hernia or phlebitis.

Extrapleural Thoracoplasty in Pulmonary Tuberculosis

Dr. Carl A. Hedblom, Madison, Wis.: Pulmonary collapse is of great value in the treatment of pulmonary tuberculosis because it promotes healing of the lesion, diminishes toxic absorption, and lessens the tendency of the disease to spread. Healing results from fibrous tissue encapsulation of the lesion. The relaxation of the lung makes possible the maximum fibrous tissue contraction, and by rest of the lung and venous and lymphatic stasis stimulates fibrous tissue formation. Toxic absorption is lessened, owing to the slowing of the lymph and blood stream and the collapse of cavitations. The spread of the disease through the blood and lymph stream is similarly retarded, and the lessened cough and sputum decrease the tendency to the dissemination of the infection through the bronchial tract. Extrapleural thoracoplasty is the only practical means of obtaining complete collapse of the lung in cases in which pleural adhesions make pneumothorax collapse impossible. The indications for this operation are limited to cases in which the condition of the other lung is satisfactory, that do not show satisfactory progress toward recovery following adequate sanatorium treatment or its equivalent, and in which satisfactory pneumothorax collapse is impossible because of adhesions. A definitely active, progressive tuberculous process, or well marked nontuberculous disease in the better lung contraindicates operation. An associated tuberculous empyema with large cavity, whether primary or secondary to pneumothorax collapse, is an indication for operation. Tuberculosis elsewhere in the body and other constitutional disease may or may not contraindicate operation, depending on the severity of the lesion and the general condition of the patient. A study of results following thoracoplasty in a large series of collected cases shows that over 60 per cent were clinically cured or greatly improved, and the total mortality during the first six weeks following operation was 13.5 per cent. By dividing the thoracoplasty into more than two stages, the indication for this operation may be extended to patients who would be poor risks for a one or two stage operation.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Psychiatry, Baltimore

5: 171-340 (Oct.) 1925

*Unusual Manifestation of Metastatic Miliary Carcinomatosis of Central Nervous System. N. D. C. Lewis, Washington, D. C.—p. 171.

*Suprarenal Cortex and Blood Cholesterol in Dementia Praecox. C. E. Gibbs, New York.—p. 189.

Inorganic Constituents of Blood of Catatonic Patients. J. M. Looney, Towson.—p. 213.

Mental Disease in United States in Relation to Environment, Sex and Age, 1922. H. M. Pollock, New York.—p. 219.

Social Psychiatry. C. P. McCord, Albany, N. Y.—p. 233.

State Administrative Problems in Care of Mental Defectives. S. Brown, New York.—p. 241.

Plea for Standardized and Intensive Treatment of Neurosyphilitic and Paretic. H. Goldsmith, Baltimore.—p. 251.

Metastatic Miliary Carcinomatosis of Central Nervous System.—In the case cited by Lewis, the total duration of illness was six weeks. The patient's health previous to this time had been excellent. The onset of the symptoms was abrupt. In the early stages before neurologic signs became pronounced, his case was considered, because of his peculiar behavior, one of catatonic dementia praecox. After definite but diffuse neurologic signs made their appearance, the diagnosis of epidemic encephalitis, of which there were several supportive facts through the history, was made by several neurologists. The man was comatose for six days before death. At the necropsy no evidence of gross tumors was found in any organ of the body. The brain was markedly congested, this congestion being universal and affecting the smallest capillaries, a few of which in the frontal regions had ruptured, thus producing small localized subpial hemorrhages. The brain structure was very boggy and edematous. The cervical cord was softened and so edematous that the gray substance was not well demarcated. The usual routine microscopic sections of the cortex disclosed a miliary carcinomatosis, and it was not until these had initiated a closer inspection of the brain with the hand glass that minute grayish red areas were visible. These areas, rarely larger than a small pinhead to the naked eye, were only slightly darker than the brain substance and were scattered everywhere in great numbers through the cortex, centrum semiovale and basal ganglions of both hemispheres. The midbrain structures, cerebellum, pons and medulla were also affected, but the cervical spinal cord, meninges and choroid plexus were free from visible lesions. No macroscopic or microscopic tumor was discovered in any other organ or tissue of the body to account for the original source of these metastases.

Blood Cholesterol in Dementia Praecox.—The results noted by Gibbs in his case seem to show that in many patients with dementia praecox the blood cholesterol is unusually low, and that it may be more directly correlated with the psychosis and with sex than with any other recognized factors.

Annals of Clinical Medicine, Baltimore

4: 365-448 (Nov.) 1925

*Recurring Peptic Ulcer. A. B. Rivers and G. B. Eusterman, Rochester, Minn.—p. 365.

Penetrating Ulcer of Stomach: Four Cases. M. Einhorn, New York.—p. 379.

*Fractional and Single Specimen Gastric Tests: Their Relative Advantages. R. S. Hubbard and J. A. Lichty, Clifton Springs, N. Y.—p. 393.

*Carcinoma in Duodenal Diverticulum: Duodenal Diverticulosis. T. H. Morrison and M. Feldman, Baltimore.—p. 403.

*Rosenthal Phenoltetrachlorphthalein Test as Means of Determining Liver Function. J. Friedenwald and Z. Morgan, Baltimore.—p. 415.

*Relationship Between Disease of Gallbladder and Infection in Gastro-Intestinal Tract. H. W. Soper, St. Louis.—p. 422.

Chronic Ulcerative Colitis. T. R. Brown, Baltimore.—p. 425.

Surgical Treatment of Chronic Ulcerative Colitis by Ileosigmoidostomy. W. F. Rienhoff, Jr., Baltimore.—p. 430.

Recurring Peptic Ulcer.—One hundred and fifty cases in which there was surgically verified evidence of one or more secondary benign or reactivated lesions in the stomach or duodenum were studied by Rivers and Eusterman. Recent statistics show that of a total of 6,402 patients of all types and ages operated on for chronic ulcer of the stomach and duodenum, only 228 required a secondary operation. This represents a failure of surgery to cure only about 3.5 per cent of these patients. Balfour has reported that secondary operations were necessary in only thirty-five of 1,000 cases in which gastro-enterostomy was performed. Peptic ulcer rarely recurs after adequate surgical treatment and postoperative precaution. Complaints pertaining to the recurring lesions are usually very similar to those caused by the original one. Hemorrhage is a frequent symptom in the recurring ulcer group. If the original ulcer was in the stomach, the recurring ulcer is almost invariably again gastric in location. There are certain types of persons who seem especially predisposed to recurrent ulcer. They include, in particular, those who are constitutionally inferior, with nervous imbalance, nervous hyperirritability, and particularly those who are indiscreet in dietetic and personal habits. This implies reference to the abuse of tobacco. Recurring ulcer, in all likelihood, is not caused by any one factor. It is probably the result of a combination of causes, among which infections, mechanical factors and chemical factors combine to establish a new lesion.

Study of Gastric Juice.—Hubbard and Lichty assert that the method of studying the gastric juice should vary with the information sought. For convenience in comparing one result with another, the removal of a single specimen is convenient. The fact that results obtained by this method are less likely to error from emotional disturbances than are those obtained in other ways enhances its value. When it is used, results which show an achylia should be regarded with suspicion. When it is desirable to know the changes in acidity that take place throughout the gastric cycle, it is best to determine the average acidity of the stomach at different times. If the maximum acidity in any part of the stomach is the thing sought, an investigation by the method of Gorham, carried out at the time when the average acidity is highest, is the method of choice. In many instances more than one study should be obtained before a decision on a case can be made. It seems to the authors that a fractional and a single specimen test, rather than a number of duplicate determinations by the same method, should be used as checks on one another, for the errors that affect one determination are different from those which influence values by another. The highest value found is the one that should be used in diagnosis, for almost all the causes of errors are such as decrease the acidity of the gastric juice. The method used in carrying out the analysis must decide whether the acid value obtained probably represents the average acidity of the stomach contents, or the percentage of hydrochloric acid present in a part of the organ.

Carcinoma in Duodenal Diverticulum.—In a series of twelve cases of duodenal diverticulum, one instance of carcinoma was discovered, the latter being the only case on record of a primary carcinoma occurring in a duodenal diverticulum.

Rosenthal Liver Function Test.—Friedenwald and Morgan regard the Rosenthal method a valuable means of determining liver function, for when injected intravenously the dye disappears rapidly under normal conditions at a uniform rate; while, on the other hand, a greater or less retention is noted corresponding to the degree of liver disturbance. In catarrhal jaundice marked retention occurs, a condition that persists for a considerable period following the disappearance of the icterus, which strongly suggests some distinct disturbance of the liver cells. In cirrhosis of the liver, retention of the dye may occur to a greater or less degree. In all instances of cancer of the liver, retention occurs to a rather marked degree. In syphilis of the liver, retention of the dye may or may not occur, depending largely on the degree of involvement. In cancer of the pancreas with secondary liver involvement, marked retention is ordinarily noted. In chronic cholecystitis, cholelithiasis and affections in which the liver itself is not severely involved, retention is never observed. Finally, it is evident that this test is of considerable value as a means of determining liver function; it should be performed as a routine whenever there is evidence of liver involvement, since it offers much diagnostic aid.

Gallbladder Disease and Gastro-Intestinal Tract Infections.—In Soper's series there were 411 cases of proved gallbladder disease. Of these, 121 cases could be credited to infections occurring in the puerperal state; 120 cases were of obscure or unknown origin. The remaining 170 cases disclosed a definite relationship between the gallbladder infection and infections in the gastro-intestinal tract: typhoid, 38 cases; dysentery, 17 cases; anacid gastritis, 26 cases; purulent proctosigmoiditis, 30 cases; colitis, 47 cases, and colonic diverticulitis, 12 cases.

Archives of Dermatology and Syphilology, Chicago

12: 773-920 (Dec.) 1925

*Microchemical Studies of Arsenic in Arsenical Pigmentation and Keratoses. E. D. Osborne, Buffalo.—p. 773.
Thrush Infections of Skin. B. Shelmire, Dallas, Texas.—p. 789.
*Mycosis Fungoides: Relation to Leukemia and Lymphosarcoma. J. F. Fraser, New York.—p. 814.
*Spinal Cord in Pemphigus. I. L. McGlasson and W. Keiller, Galveston, Texas.—p. 829.
Fusiform Bacilli and Spirochetes. XII. Occurrence in Gangrenous Lesions of Fingers. I. Pilot and K. A. Meyer, Chicago.—p. 837.
Hypercholesterolemia. II. Experimental Induction. F. W. Sunderman and F. D. Weidman, Philadelphia.—p. 840.
*Lacquer Dermatitis Treated with Rhus Toxicodendron Antigen. C. M. Williams, New York.—p. 851.
*Fungus Infections of Skin. J. F. Burgess, Montreal.—p. 853.
*Value of Nonspecific Protein Therapy in Syphilis: Effect on Wassermann Reaction When Used as Adjunct to Neo-Arsphenamine. S. S. Greenbaum and C. S. Wright, Philadelphia.—p. 858.

Microchemical Study of Arsenic in Tissue.—There exists a satisfactory method for the microchemical study of arsenic in tissue,. which has been employed by Osborne in the study of arsenical keratoses and pigmentation. A detailed description of the method, with controls, is given; likewise a study of arsenical keratoses, with photomicrographs showing the location of the arsenic deposits. The mechanism of the production of arsenical keratoses and its bearing on the development of epitheliomas is discussed. The probable action of arsenic in the production of pigment is described.

Mycosis Fungoides; Leukemia; Lymphosarcoma.—Two cases of mycosis fungoides are reported by Fraser in which the pathologic changes in the tissues were unquestionably neoplastic. Evidence is presented which shows a genetic relation between mycosis fungoides, lymphatic leukemia and lymphosarcoma. The name reticulum cell sarcoma is suggested to replace the term lymphosarcoma in designating the lesion of mycosis fungoides. The suggestion is based on the assumption that the lesion has its origin in the reticulum cells of the papillary layer (reticulo-endothelial system of the skin).

Spinal Cord in Pemphigus.—The case reported by McGlasson and Keiller appears to indicate that a great number of corpora amylacea is the most characteristic finding in the brain stem and cord in patients dying of pemphigus. In a second case, however, seen after the records on the first case were ready for publication, there were no corpora amylacea and degeneration of the nerve cells, and occasional microscopic hemorrhages were the only pathologic lesions common to the two cords. Besides the neurologic findings, the chief difference between the two cases was that the case reported occurred in an exceedingly fat woman, while in the case to be reported later the patient was extremely emaciated. Possibly, the extreme emaciation and presumably carbohydrate hunger might account for the absence of corpora amylacea.

Lacquer Dermatitis.—Williams asserts that his case is unique; there is no other report of the treatment of lacquer dermatitis with *Rhus toxicodendron* antigen. It is evidence in support of the belief that the poisonous principle in *Rhus vernicifera* is the same as that in *Rhus toxicodendron,* and strong evidence that *Rhus toxicodendron* antigen may be useful in any form of rhus poisoning.

Fungus Infections of Skin.—Burgess has investigated 140 cases of ringworm. Of these, 130 showed the presence of a ringworm fungus by microscopic examination, and ten cases were negative. In sixteen cases, in which the microscopic examination was positive, it was impossible to isolate the fungus. Of the ninety-nine identified cultures, sixty-two were obtained from cases of ringworm of the scalp, thirty-four from lesions of the glabrous skin, and three from cases of ringworm of the beard. Of sixty-two cases of scalp ringworm, 60 per cent were due to *Microsporon* infections, 50 per cent of which were about equally divided between *Microsporon audouinii* and *M. lanosum;* 25 per cent were due to *Trichophyton* infections, and about 15 per cent to *Achorion schönleinii.* Of thirty-four cases of epidermophytosis, 12 per cent were of *Microsporon* origin, 60 per cent due to *Trichophyton* varieties, and 22 per cent to *Saccharomyces.* Three cases of tinea barbae were all due to members of the *Trichophyton* family. Two cases of epidermophytosis are reported, in each of which lesions of dyshidrosis developed following a primary mycotic infection. In one of these cases, lesions of *Lichen trichophyticus* were also present.

Nonspecific Protein Therapy in Syphilis.—Greenbaum and Wright show that nonspecific protein therapy alone will result in partial or complete involution of secondary and tertiary lesions. When used as an adjunct to neo-arsphenamine in the treatment of patients with latent syphilis with strongly positive Wassermann reactions, the influence in reducing a positive reaction to a negative one is more marked than when neo-arsphenamine alone is used. The explanation of this is not clear, but it is suggested that the protein therapy serves to stimulate normal protective mechanisms within the body. If this is true, nonspecific protein therapy should prove a valuable adjunct to the usual antisyphilitic remedies.

Canadian Medical Association Journal, Montreal

15: 989-1092 (Oct.) 1925

Cancer of Colon. H. W. Carson, London.—p. 990.
*Injection of Lipiodol as Aid in Roentgen-Ray Diagnosis of Bronchopulmonary Lesions, Including Tuberculosis. D. H. Ballon, Montreal. —p. 995.
*Roentgen-Ray Demonstration of Pulmonary Changes in Tuberculosis by Lipiodol Injection. E. Archibald, Montreal.—p. 1000.
*Cultural Study of Ringworm Fungi. J. F. Burgess, Montreal.—p. 1003.
*Familial Icterus Gravis of New-Born. A. P. Hart, Toronto, Ont. —p. 1008.
*Amebic Dysentery in Canada. J. E. Bates, Toronto.—p. 1012.
*Studies on Incidence of Goiter Among School Children in Manitoba. T. G. Hamilton and D. F. McRae, Winnipeg.—p. 1017.
*Basal Metabolic Determinations in 250 Winnipeg School Children. A. T. Cameron, Winnipeg.—p. 1022.
Goiter Problem. F. H. Lahey, Boston.—p. 1026.
Use and Abuse of Obstetric Forceps. W. P. Tew, London, Ont. —p. 1031.
Urinary Retention. G. S. Foulds, Toronto.—p. 1034.
Bladder Neck Obstructions—How Can Operative Mortality Be Lowered and End-Results Improved? D. N. Eisendrath, Chicago.—p. 1037.
Gastric and Duodenal Ulcer. F. B. Mowbray, Hamilton.—p. 1042.
Cancer of Lower Lip. W. H. McGuffin, Calgary.—p. 1046.
Necessity of Effective Organization in Public Health Departments. J. W. S. McCullough, Toronto.—p. 1050.
Familial Tendency in Angina Pectoris: Case. E. S. Mills, Montreal. —p. 1052.
Larvae of Fly in Tympanum: Case. M. L. Jewett, Millville, N. B. —p. 1053.

Use of Lipiodol in Diagnosis of Lung Lesions.—Ballon is of the opinion that the injection of lipiodol in pulmonary lesions will probably assist the surgeon materially in the selection of suitable cases for operation in pulmonary tuberculosis, and indicate clearly the successful or nonsuccessful result of his treatment and whether there is a necessity of further operative intervention. It will also assist in elucidating the cause of a persistence of certain symptoms in cases of pulmonary tuberculosis following thoracoplasty. It will demonstrate associated conditions such as bronchiectasis and pulmonary tuberculosis, and will aid in the diagnosis of subdiaphragmatic abscess, interlobar empyema communicating with a bronchus, new growth, and similar conditions. This study includes illustrations of lipiodol injections of the normal lung, the bronchial tree, bronchiectasis, lung abscess and pulmonary tuberculosis after thoracoplasty.

Use of Lipiodol in Chest Roentgenography.—The demonstration of residual lesions after thoracoplasty, the localization of which is made accurately by stereoscopic and lateral plates, Archibald says, is hardly possible by any other method than by injection of lipiodol. It determines whether further operation is justifiable or not. If a further operation is attempted, the method will allow of some reasonable control of the results obtained. In addition it ought to be possible, in cases that come up for an opinion as to the advisability of thoracoplasty, when the ordinary roentgenograms give no detailed information about the condition of the lung, owing to dense shadows, to demonstrate with lipiodol the presence or absence of cavitation and bronchiectasis. Archibald looks forward also to its use in differentiating between localized pneumothorax and intrapulmonary cavity, a distinction which is frequently difficult to make. The problem of annular shadows may, in some measure, be resolved by this method.

Culture of Ringworm Fungus.—For the cultivation of these fungi, Burgess uses a 6 per cent glycerin agar. Some varieties show a growth visible to the naked eye in from four to twenty days. Some rarer types, such as *Trichophyton faviforme*, do not appear in culture for two months or even longer. There is a striking difference between the fungi as they appear in the lesion and when they are grown on cultural mediums. The growth on cultural medium is much more luxuriant than it is in the lesion itself, and they differ greatly in their morphologic characters. Besides their clinical value, cultural studies of ringworm infection assist in forming a clear conception of the lesions they produce.

Familial Icterus Gravis of New-Born.—The family history in the case cited by Hart was a remarkable one. They had had six boys born previously, all apparently as healthy and strong at birth as this baby. All, however, had developed jaundice within the first twenty-four hours, and the condition had become progressively worse until death occurred in from three to eleven days. They had only one child living, a girl who was the second child born to the family. She had become jaundiced as the others but she had managed to live, although deeply jaundiced, until 1 year old and weighing at this age only what she had weighed at birth. After a year the jaundice gradually disappeared and she grew very rapidly so that she is now at 12 years a very big girl for her age but suffering with chorea. There was absolutely no history of jaundice in the family on either the paternal or the maternal side, and both parents were perfectly healthy. There was no history of syphilis. There had been no miscarriages. The baby was a well developed male child, 2 hours old, and perfectly healthy and at this time with no sign of jaundice. On the second day, jaundice began to appear on the tip of the nose. On the next day, the baby being then 48 hours old, he was distinctly jaundiced. The liver was not enlarged and the jaundice was no more intense than ordinary icterus neonatorum. On the third day, the jaundice had become much more intense, so that the skin was a deep orange. It was clearly a case of familial icterus gravis. It was decided to do an exsanguination transfusion. Three hundred cubic centimeters of blood was drawn from the anterior fontanel, 335 cc. of blood being transfused at the same time into the internal saphenous vein at the left ankle. The transfusion of blood was begun after 20 cc. of blood had been removed, and the transfusion and exsanguination went on synchronously until the required quantity had been used, and was ended by giving the baby 35 cc. more than had been removed. In addition, 60 cc. of 5 per cent glucose solution were given. The donor was a healthy male not belonging to the family. By the following morning the jaundice was much less intense. It continued to fade, so that by the fourth day it had entirely disappeared and the baby seemed much better. When 3 weeks old, there was a slight return of jaundice. Preceding this he had been constipated. This slight return of jaundice had entirely disappeared four days after it was first noted and when the constipation had been corrected. He has had no return of the jaundice and is developing as any normal baby.

Amebic Dysentery in Canada.—Bates cites what appears to be the third case of amebic dysentery originating in Canada. It is his opinion that such cases are not as rare as usually stated, and that with careful examination of the stools of persons suffering from mucous colitis the amebas would be encountered in as high a proportion of cases as in England or the United States.

Incidence of Goiter Among Manitoba School Children.—The studies made by Hamilton and McRae are based on the findings in a survey of 2,329 children in the city of Winnipeg and several country points in Manitoba. It is shown that there is a high incidence of goiter among these children, and there is an apparent difference in the susceptibility of the various races. This shows both in the total goitrous incidence and in the degree of severity. These findings are taken to indicate the possible importance of causative factors other than the water supply.

Basal Metabolism of Winnipeg School Children.—Linear curves that are definitely higher than those based on Benedict and Talbot's predicted figures have been determined by Cameron for basal oxygen consumption by normal preadolescent children, measured in Winnipeg by a closed circuit clinical apparatus. Of 163 goitrous children whose oxygen consumption has been measured under basal conditions and referred to these curves, probably not more than 2.5 per cent are definitely above maximum normal limits (and therefore possibly hyperthyroid), and none are definitely below normal limits.

Iowa State Medical Society Journal, Des Moines

15: 629-680 (Dec. 10) 1925

Relationship of Tuberculosis to Certain Fundus Changes: Periphlebitic Retinitis. T. B. Holloway, Philadelphia.—p. 629.
Perforations of Frontal Sinus Wall in Chronic Empyema. L. G. Howard, Council Bluffs.—p. 637.
Management of Cystitis. W. R. Hornaday, Des Moines.—p. 639.
End-Results in Submucous Resection. C. E. Chenoweth, Mason City.—p. 643.
Gallbladder Disease. J. Phillips, Cleveland.—p. 649.
Treatment of Goiter. N. J. Maclean, Milwaukee.—p. 653.
Hospitalization of War Veterans Today. I. M. Pugh.—p. 657.

Journal of Clinical Investigation, Baltimore

2: 117-212 (Dec. 20) 1925

*Effect of Anoxemia on Heart. II. Intraventricular Conduction. W. H. Resnik, Baltimore.—p. 117.
*Id. III. Changes in Auricles: Relationship Between Anoxemia and Auricular Fibrillation. W. H. Resnik, Baltimore.—p. 125.
*Simultaneous Respiratory Exchange and Blood Sugar Time Curves in Diabetic and Nondiabetic Individuals Following Ingestion of Glucose. I. M. Rabinowitch, Montreal.—p. 143.
Effect of Caffein Sodio-Benzoate, Theobromin Sodio-Salicylate, Theophyllin and Euphyllin on Coronary Flow and Cardiac Action of Rabbit. F. M. Smith, G. H. Miller and V. C. Graber, Iowa City.—p. 157.
Total Acid-Base Equilibrium of Plasma in Health and Disease. VI. Studies of Diabetes. J. P. Peters, H. A. Bulger, A. J. Eisenman and C. Lee, New Haven, Conn.—p. 167.

Effect of Anoxemia on Heart.—Resnik says that, in the normal heart, anoxemia produces comparatively slight changes in intraventricular conduction. These changes are similar in character, though much less marked than those which occur in auriculoventricular conduction: at first, the Q-R-S interval shortens; later, it lengthens. It is probable that ventricular aberration in clinical cases is an indication of more or less serious disturbance of the function of the Purkinje tissues. Ventricular fibrillation is prone to develop during anoxemia.

Effect of Anoxemia on Auricles.—Resnik found that the sino-auricular node is highly sensitive to anoxemia. There is at first a brief period during which the rate of impulse formation is accelerated, followed rapidly by progressive slowing of the intrinsic rate of the heart. Anoxemia first reduces, then increases the absolute refractory period of the auricles. Anoxemia diminishes the rate at which a circus movement travels throughout the auricle. When vagal tone is removed, and the auricles are stimulated by a faradic current, the early effect of anoxemia is to predispose the auricles to fibrillation; the late effect is to inhibit the development of fibrillation. The mechanism by which anoxemia produces these effects is discussed.

Respiratory Exchange and Blood Sugar Time Curves.—Simultaneous respiratory exchange and blood sugar curves were obtained by Rabinowitch in eleven cases of diabetes mellitus, five of renal glycosuria and two of pituitary disease with glycosuria. This method demonstrated the possible fallacy of the interpretation of blood sugar curves. Hyperglycemia results only when the combined rates of oxidation and storage do not keep pace with the rate of absorption. In a mildly diabetic patient in a state of starvation, the storage mechanism may be unimpaired, or at least not impaired enough to be demonstrated by methods now in use. These findings are suggestive of the possible existence of two different forms of diabetes. In one form of the disease, the predominant defect is storage of carbohydrates; in the other, defective oxidation. Based on the classification of diabetes employed here, the former type of disturbance—defective storage—would appear to be predominant in the more severe form of the disease.

Journal of Infectious Diseases, Chicago

37: 481-562 (Dec.) 1925

*Studies on Respiratory Diseases. XXI. Electrophoretic Potential and Virulence of Pneumococci. I. S. Falk, H. A. Gussin and M. A. Jacobson, Chicago.—p. 481.
*Id XXII. Relation Between Fatality in Lobar Pneumonia and Electrophoretic Potential on Pneumococci. I. S. Falk, M. A. Jacobson, and H. A. Gussin, Chicago.—p. 495.
Id. XXIII. Electrophoretic Potential and Virulence of Variants of Type I Pneumococci. I. S. Falk, M. A. Jacobson and H. A. Gussin, Chicago.—p. 499.
Id. XXIV. Electrophoretic Potential, Virulence and Serum Agglutination with Single Cell Cultures of Variants of Type I Pneumococci. I. S. Falk and M. A. Jacobson, Chicago.—p. 507.
Effect of Hydrogen Ion Concentration on Certain Antigenic Properties of Clostridium Botulinum. I. S. Falk and F. Powdermaker, Chicago. —p. 514.
Detoxication of Bacterial Vaccines by Formaldehyde. W. H. Wherry and J. A. Bowen, Cincinnati.—p. 520.
*Separation of Soluble Specific Substance from Hemolytic Streptococci. E. F. Hirsch, Chicago.—p. 523.
Intra-Uterine Injection of Acid-Fast Bacilli in Guinea-Pig. Y. C. Suu, O. Ishii and L. Loeb, St. Louis.—p. 528.
Nature of Toxic Substances Produced by B. Suipestifer. E. E. Ecker and M. L. Richardson, Cleveland.—p. 538.
Production of Toxic Substances in Young Cultures of Single Cell Strains of B. Paratyphosus B. E. E. Ecker and E. Megrail, Cleveland.—p. 526.
Antibody Response to Large and Small Doses of Multiple and Single Antigens, and Restimulation of Specific Antibody Formation by Heterologous Antigens. M. Corrigan, Chicago.—p. 549.
*Atypical Weil-Felix Reaction. R. Gilbert and M. Coleman, Albany, N. Y. —p. 559.

Electrophoretic Potential of Pneumococci.—From measurements on seventy-six strains of pneumococci isolated from cases of lobar pneumonia (nineteen type 1, twenty-four type 2, seven type 3 and twenty-six type 4) done by Falk, Gussin and Jacobson, it appears that the electrophoretic potentials are different for the several types. The sequence of decreasing electrophoretic potential is identical with the sequence for decreasing virulence.

Relation Between Fatality in Pneumonia and Electrophoretic Potential of Pneumococci.—The sequence of decreasing virulence of pneumococci for white mice is 3, 1, 2, 4, and this is the sequence also for decreasing electrophoretic potential. As this is also the probable sequence of decreasing fatality rate in lobar pneumonia in man, it was anticipated by Falk, Jacobson and Gussin that strains of pneumococci isolated from fatal cases of pneumonia might show larger potentials than strains of the same type isolated from nonfatal cases. The experimental findings reported here confirm this anticipation for pneumococci of types 2, 3 and 4 and contradict it for strains of type 1.

Specific Substance Extracted from Hemolytic Streptococci.—A soluble specific substance has been extracted from hemolytic streptococci by Hirsch. The chemical reactions of this substance resemble those of similar substances prepared from many bacteria by other investigators. Solutions of this substance give precipitin reactions in high dilution with antistreptococcus serums, and with the serum of rabbits injected with the substance.

Atypical Weil-Felix Reaction.—A case is described by Gilbert and Coleman in which no definite diagnosis was made, grip, typhoid, Brill's disease, tick-bite fever and Rocky Mountain spotted fever being, in turn, considered and rejected. Both before and after inactivation by heating at 62 C., the patient's serum from cases known to be typhus fever lost the agglutinins for *B. proteus* X 19 at a point between 54 and 56 C. In immune rabbit serum the agglutinins were not destroyed until between 70 and 75 C. was reached. These results indicate the desirability of determining the relative thermolability of the agglutinins in serum from suspected cases of typhus fever.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

37: 449-502 (Nov.) 1925

*Relationship of Syphilis to Other Diseases of Skin. R. W. Mackenna. —p. 449.
Relationship of Syphilis to Other Dermatoses. E. F. Skinner.—p. 459.
Poikiloderma Atrophicans Vasculare. C. Rasch.—p. 477.

Relationship of Syphilis to Other Skin Diseases.—Mackenna is convinced that a syphilis infection, acquired or hereditary, does not render the sufferer more liable to other diseases of the skin, but a syphilitic infection acquired by a person suffering from a skin disease may modify the preexisting skin affection. This modification may affect the character of the lesions, may superimpose on the skin lesions definite lesions of the major affection, or may render these skin lesions more chronic and less amenable to treatment.

British Journal of Ophthalmology, London

9: 609-656 (Dec.) 1925

Endothelioma of Optic Nerve. H. Neame and E. Wolff.—p. 609.
Glaucoma Secondary to Choroidal Sarcoma. Treatment of Painful Blind Glaucomatous Eyes. H. Neame and W. A. Kahn.—p. 618.
Colors of After-Images, Following Strong Light Stimuli. H. Weve. —p. 627.

British Medical Journal, London

2: 1099-1160 (Dec. 12) 1925

Diagnosis and Treatment of Splenic Enlargement in Children. H. Rolleston.—p. 1099.
Strength of Insulin Preparations: Comparison Between Laboratory and Clinical Measurements. Biologic Assay. H. P. Marks.—p. 1102.
Id. Clinical Assays. G. A. Harrison and R. D. Lawrence.—p. 1104.
Right and Left-Handedness in Primitive Men. G. E. Smith.—p. 1107.
Operative Treatment of Chronic Middle Ear Suppuration. G. J. Jenkins. —p. 1109.
Id. S. R. Scott.—p. 1112.
Id. J. B. Horgan.—p. 1113.
Chronic Nonsuppurative Middle Ear Deafness. W. Milligan.—p. 1115.
Id. J. K. Love.—p. 1117.
Id. N. Maclay.—p. 1118.
Id. H. N. Barnett.—p. 1119.
Ascaris in Bile Ducts. W. F. Brayne.—p. 1122.
*Congenital Malformation of Spine. E. F. W. Buckell.—p. 1123.
Rectal Anesthesia. R. D. Laurie.—p. 1123.
*Serous Suture Material and Peptic Ulcer. J. O'Conor.—p. 1123.

Congenital Malformation of Spine.—Buckell reports the case of a woman who fell downstairs in her fifth month of pregnancy. She was quite well in a day or two. When the child was born, after a normal labor, it was noted that at about the middle of the back was a wound on the right side of the spinous processes. No bone could be felt in this wound. Below the wound was a raised lump, which was hard and felt like fused bone. There was also a complete cleft palate but no harelip. The left parietal bone was about half as well developed as the right, and the right side of the frontal bone was half as well developed as the left. All the sutures were very wide. There was a hematoma over the left parietal bone. There was practically no neck; it appeared to have been telescoped into the chest, which in front showed no marked abnormality. The baby lived fourteen days. During life, it never closed its eyes by night or day.

Serous Suture Material and Peptic Ulcer.—O'Conor calls attention to the fact that while absorbable catgut is essential for approximation of divided mucous membrane, its employment for any serous closure is fraught with danger of dehiscence. The employment of Lembert silk stays to guide the introduction of continuous Lembert silk suture is the only certain method, in O'Conor's opinion, of avoiding a mucous lesion.

Bulletin Naval Medical Association of Japan, Tokyo

3-8 (Oct.) 1925

Filtrability of Spirochaeta Icterohemorrhagiae. T. Kabeshima.—p. 3.
Superiority Between Phenol and Compound Solution of Cresol as Disinfectant for Excreta. C. Suzuki.—p. 5.
Multiple Papilloma of Bladder. S. Kudo.—p. 8.
Typhoid Abscess of Abdominal Rectus. T. Mizuno.—p. 27.

Calcutta Medical Journal

20: 49-94 (Sept.) 1925

Operative Treatment of Chronic Frontal Sinus Suppuration. J. K. Datta.—p. 49.
Nature of Disease and Therapeutics. P. K. Bardhan.—p. 60.
*Case of Rupture of Trachea. P. Chatterjee.—p. 66.
Total Ophthalmoplegia of Left Eye. S. K. Mukherjee.—p. 67.
Unusual Delay in Regaining Lost Accommodation After Application of Cycloplegic. B. N. Bhaduri.—p. 69.

Rupture of Trachea.—Chatterjee relates a case of subcutaneous rupture of the trachea the result of a fall. The patient, aged 10, fell from a chair, his neck striking the back of the chair. Extensive emphysema and dyspnea immediately developed and were followed by cyanosis. Operation was done within an hour after the injury. A small rupture was detected at the posterolateral aspect of the trachea on the left side, at its junction with the cricoid cartilage. A plug of gauze was introduced into the wound up to the site of the rupture. Dyspnea was relieved by opening the trachea and putting in a tracheotomy tube. In this case, the rapidity and extent of spread of extravasated air was disproportionate to the extent of the tracheal lesion.

Indian Medical Gazette, Calcutta

60: 507-558 (Nov.) 1925

Chronic Osteomyelitis in Long Bones: Cases. H. Hallilay.—p. 507.
Artificial Feeding of Infants. E. H. V. Hodge.—p. 509.
Extra-Uterine Gestation Going to Term with Living Mother and Child. P. S. Mills.—p. 510.
Suprapubic Prostatectomy at One Sitting. M. D. David.—p. 511.
Value of Iodine Intravenously in Treatment of Influenza. C. P. V. Shunker.—p. 513.
Mosquito Factor in Malaria of Assam Tea Gardens. C. Strickland.—p. 514.
Treatment of Malaria with Peracrina. W. Fletcher.—p. 524.
Stone in Bladder Formed Around Foreign Body. J. L. Lunham.—p. 527.
Amputation of Penis. S. C. Das Gupta.—p. 528.
Fatal Case of Liver Abscess. J. P. Arland.—p. 531.
Case of Accidental Abdominal Injury. K. V. Joglekar.—p. 532.
Case of Hydatid Cyst of Right Parotid and Submaxillary Glands. N. P. Shrivastava.—p. 532.

Indian Medical Record, Calcutta

45: 337-368 (Nov.) 1925

Therapeutic Aspect of Asthma. S. Banerjee.—p. 337.
German Congress of Roentgenology. K. M. Hiranandani.—p. 339.
Ulcerating Granuloma of Pudenda. R. Saheb and S. C. Dutt.—p. 340.
Immunity. A. Ray.—p. 341.

Irish Journal of Medical Science, Dublin

555-602 (Dec.) 1925

Perthes' Disease. H. F. MacAuley.—p. 560.
*Teratoblastoma of Mesentery: Tumor. D. J. Cannon and W. D. O'Kelly.—p. 571.

Teratoblastoma of Mesentery.—The patient in this case was 3 years of age. There were no symptoms other than enlargement of the abdomen. The preoperative diagnosis was embryonal kidney tumor. It proved to be a tumor of the mesentery—a teratoblastoma—measuring 6 inches (15 cm.) in diameter. The patient recovered.

Kenya Medical Journal, Nairobi, East Africa

2: 215-244 (Nov.) 1925

Venereal Disease Measures in Uganda. G. J. Keane.—p. 216.
Natural Enemies of Rats: Their Possibilities in Plague Prevention. G. H. Goldfinch.—p. 225.
Pellagra in Nyasaland. H. M. Shelley.—p. 235.

Lancet, London

2: 1209-1264 (Dec. 12) 1925

Lymphadenoma (Hodgkin's Lymphogranuloma). H. Rolleston.—p. 1209.
Case for Unborn Child. T. W. Eden.—p. 1218.
*Behavior of Diabetic Toward Circulating Glucose. H. S. Pemberton and L. Cunningham.—p. 1222.
*Calcification of Pleura: Case. F. H. Young.—p. 1224.
*Cultivation of Spirillum of Rat-Bite Fever. T. Joekes.—p. 1225.
*Case of Psoriasis: Isolation of Monilia From Skin Scales, Mouth and Sputum. G. G. Sanders.—p. 1226.

Behavior of Diabetic Patient Toward Glucose.—The results recorded by Pemberton and Cunningham make it clear that the diabetic differs from the nondiabetic patient in his behavior toward circulating glucose. These differences are: 1. Fasting and without insulin, the arterial value differs quite widely from the venous. 2. With glucose and ether and without insulin, there is a greater increase in both arterial and venous values, and in the fasting state the venous value may rise higher than the arterial. 3. With insulin, either fasting or with food, the relationships between arterial and venous values tend to approach those of the nondiabetic patient. The tissue at fault appears to be muscle. In order to explain these observations, it must be assumed that diabetic muscle tissue cannot take up glucose; all these abnormalities are removed in some measure by insulin. The behavior of the diabetic patient and the characteristic alteration obtained with insulin turn on the factor of glycogen formation.

Calcification of Pleura.—Roentgenograms of Young's case showed a dense shadow outlining the lung, and also the heart, in a lesser degree. The points of interest about the case are: (1) the extent and the diffuseness of the calcification; (2) the absence of any respiratory symptoms at the time of examination, and (3) the absence of any history of respiratory disease.

Cultivation of Spirillum of Rat-Bite Fever.—The reaction of medium found by Joekes to be most suitable for the growth of these spirilla is p_H 7.2 to 7.6. In this connection it should be remembered that the serum slope acts as a potent "regulator" or "buffer." It was found that the reaction of Vervoort's fluid, which is originally p_H 6.6, had altered to p_H 7 to 7.2, after having been warmed for fifteen minutes to 37 C. in contact with the serum slope. From this it is evident that the reaction of Vervoort's medium should not be readjusted to p_H 7.2 before adding it to the serum slope, since, if this was done, it would become too alkaline on incubation. In some of the cultures the spirilla were still found alive and actively motile after three weeks, and it seemed to make little difference whether they were kept at room temperature or at 37 C. Once the primary cultures were obtained, it was *just as easy to make subcultures in 1 per cent glucose broth* —preferably with the addition of some defibrinated rabbit's blood—as in the original medium. So far Joekes has not succeeded in infecting mice with the cultures, nor has he been able to obtain cultures from infected mice, but only from guinea-pigs.

Monilia in Psoriasis.—Sanders shows that in the skin lesions of psoriasis, and in the mouth and sputum, the streptococcus and the monilia are closely associated; the streptococcus is shown to be the more widely distributed organism, as it was found in the alimentary tract and urine, in the latter situation with *Bacillus coli.*

Okayama Medical Journal, Okayama, Japan

No. 430, 1101-2034 (Nov.) 1925

Action of Pancreatic Lipase. M. Fujihara.—p. 1101.
Milk-Spots, "Taches Laiteuses" in Omentum. Y. Hamazaki.—p. 1109.
Primary Carcinoma of Pancreas. M. Yoshida.—p. 1168.

Practitioner, London

115: 369-432 (Dec.) 1925

Pregnancy and Tuberculosis: Artificial Pneumothorax. T. Oliver.—p. 369.
Surgical Treatment of Constipation. P. Lockhart-Mummery.—p. 380.
Value of Scopolamine-Morphine Narcosis in Labor. G. W. Theobald.—p. 393.
Urinary Calculi. W. K. Irwin.—p 402.
*Gangrene in Aged. C. Noon.—p. 409.
Vaccines in Chronic and Recurring Catarrh of Respiratory Tract. J. S. Dick.—p. 416.
Treatment of Muscular Wryneck. A. H. Edwards.—p. 420.

Surgical Intervention in Gangrene in Aged.—Noon reports twenty cases of gangrene occurring in aged patients all of whom were subjected to operation. In nineteen cases an amputation was done above the knee on the affected side; in one case an amputation was done below the knee. The oldest patient operated on was 83 years of age; the youngest, 56. Eighteen patients were men and two were women. Eighteen patients recovered; two died. Of eleven patients with capillary thrombosis, ten recovered; of four patients with primary obstruction of a large artery, three recovered; of three with diabetes complicated by gangrene, three recovered; of two with gangrene associated with inflammatory and toxic conditions, two recovered.

Bulletin de l'Académie de Médecine, Paris

94: 1095-1173 (Dec. 8) 1925

Conditions for Competition for Prizes Offered for 1926, 1927, 1928.
Biographical Sketch of Dr. R. Lépine.' C. Achard.—p. 1127.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 1483-1520 (Nov. 27) 1925

*The Skin Manifestations of Barbiturism. G. Caussade et al.—p. 1483.
*Hemicrania from Vasodilatation. Pasteur Vallery-Radot and P. Blamoutier.—p. 1488.
Diaphragmatic Hernia. H. Grenet et al.—p. 1493.
*Liver Lesions in Syphilis. Dumitresco-Mante.—p. 1497.
*Dupuytren's Contraction. E. Apert.—p. 1502.
*Lambliasis of the Gallbladder. M. Labbé et al.—p. 1505.
Skin Lesions from Beverages Containing Salicylic Acid. Lortat-Jacob.—p. 1511.
*Asthma and Malaria. C. Mainini.—p. 1514.
*Hypertonic Treatment of Cerebrospinal Hypertension. P. Pagniez.—p. 1518.

Pathogenesis of Skin Lesions from Barbital and Its Compounds.—Caussade, Tardieu and Lejard discuss their case in a woman of 43. A daily dose of 0.20 Gm. of phenobarbital induced chills, lassitude, headache and fever, after eight days, and an eruption resembling measles, with enlargement of glands and pharyngitis, after fourteen days. The clinical picture suggested that a latent infection may have been aroused under the influence of the drug. However, blood cultures were negative, and there was no transmission of the infection to other patients. Such eruptions can usually be reproduced in a person once affected, as has been observed by Woolley, Pasteur Vallery-Radot and Blamoutier. The phenomena seem to contradict Milian's infection theory, supporting rather that of idiosyncrasy or anaphylaxis. On the other hand, the variations of the blood calcium in barbital poisoning are analogous to those in certain cases of asthma, melancholia or Quincke's edema. This may be explained by a disturbance of the vegetative system, similar to that in Laurent's cases of alimentary or drug poisonings associated with sympathicotonia. These eruptions from slight, frequently repeated barbituric acid poisoning may give the clue when the symptoms otherwise suggest paresis, cerebellar disease, epidemic encephalitis or brain tumor.

Headache, with Nasal and Eye Discharge, Limited to One Side.—Pasteur Vallery-Radot and Blamoutier's patient, a woman, aged 35, presented daily paroxysms of headache with lacrimation and a watery discharge from the nose. The phenomena were confined to one side of the head, and were accompanied by different vasomotor changes. The ice test, namely, application of ice to the forehead, or plunging the hand in ice water always relieved the headache in two minutes, all the symptoms completely subsiding in five minutes. Under one subcutaneous injection of 1 mg. of epinephrine the headache and also the nose and eye secretion were arrested in ten to fifteen minutes, not reappearing for twelve or fourteen hours. Intravenous injection of one drop of a 0.1 per cent solution of epinephrine arrested immediately the pathologic phenomena. Twenty drops of the solution, used for a gargle, induced an improvement in a few minutes, the effect being less pronounced than with subcutaneous injection. Administration of epinephrine by the mouth or rectum, or its application to the mucous membrane was without effect. A stream of hot air, applied to the forehead, for about ten minutes, as well as inhalation of amyl nitrite aggravated the headache and the secretions. Evidently the disturbances were due to a vasodilatation of sympathetic origin; thus explaining the efficiency of the vasoconstrictor agents. The patient recovered after twenty subcutaneous injections (each 1 cc.) of the epinephrine solution. The mother and a son of the patient suffered from migraine. A hereditary defect was revealed by a sympathetic syndrome of vasoconstriction in one and of vasodilatation in the others.

Liver Disease in a Syphilitic.—Dumitresco-Mante describes a case in a man, aged 34. In the first phase of the disease there was hypertrophy of the liver, accompanied by a hectic fever, for sixteen months. The second phase was a long remission. The third phase was characterized by Laennec's cirrhosis with ascites. The patient died from superposed tuberculous pleuritis and peritonitis.

Hereditary Contraction of the Palmar Fascia.—Apert reports the observation of a family with Dupuytren's contraction in four generations. It affected only men, and it appeared earlier in each successive generation. None of the patients had been exposed to lead poisoning; thus a hereditary predisposition seemed to be the sole cause. Radium was used in one case; an ampule with the emanation was applied to the palm during five nights. The contraction of the fascia relaxed, leaving only a cord, which does not interfere with the use of the hand.

Lambliasis of the Gallbladder.—In eighty-five intubations of the duodenum, for different affections, Labbé, Nepveux and Gavrila found *Giardia lamblia* in the gallbladder in 8.2 per cent. A rebellious dyspepsia with consecutive malnutrition were the predominant manifestations. The dyspepsia was chiefly of intestinal origin, characterized by an intermittent or permanent diarrhea. Dysentery was revealed in the history of most of the patients, preceding the lambliasis by thirty-seven years in one of them. Later appeared the involvement of the duodenum, or directly of the gallbladder. The different stages of the disease are entailed by the upward moving of *Giardia intestinalis*. In the advanced stage, the parasite may be absent from the stools and be found exclusively in the bile of the gallbladder. No treatment, used to date, has displayed any efficacy.

Asthma and Malaria.—Mainini treated a seemingly essential asthma in a subject with mild malaria. The patient definitely recovered under quinine, while other methods of treatment had failed. The asthma in this case was ascribed to changes of the endocrine glands, especially of the suprarenals, under the action of the plasmodium.

Hypertonic Solutions in Treatment of Cerebrospinal Hypertension.—Pagniez' first case of meningeal hemorrhage was in a man with chronic purpura; the other in a young girl, following an injury to the skull. The phenomena of cerebrospinal hypertension in the man subsided under repeated ingestion of a hypertonic solution of glucose, 40 Gm. in half a glass of water, twice a day or oftener. The same results were obtained in the girl with a concentrated saline solution which had a purgative action. He commends this Weed and McKibben method for general adoption.

Paris Médical

57: 453-492 (Dec. 5) 1925

Therapeutics in 1925. F. Rathery.—p. 453.
*Treatment of Leukemia. E. Sergent and R. Mignot.—p. 468.
Acriflavine in Grave Infections. A. Lemierre.—p. 471.
*Salicylate in Intravenous Injection. Carnot and Blamoutier.—p. 477.
General Anesthesia with Malonyl-Urea Derivatives. P. Fredet.—p. 479.
*Malaria Treatment of General Paralysis. A. Fribourg-Blanc.—p. 484.

Treatment of Myeloid Leukemia.—Sergent and Mignot report a case of myeloid leukemia treated by roentgen rays. After two exposures the general condition notably improved; the spleen became reduced in size, and the blood picture gradually returned to normal. The improvement persisted for ten months; then a recurrence yielded to renewed treatment. Successive recurrences finally failed to respond to the roentgen rays, and the patient died. They cite further some cases in which the rays had induced toxic phenomena from products of cell destruction, or anemia from repeated irradiations, also acute exacerbations of the disease. Deep rays, given at intervals, seem to be most effectual. Besides the spleen, the bone marrow should be exposed also by applying the rays to the sternum, ribs, vertebrae and long bones. In certain cases the patient's life was prolonged by seven or eight years. Large doses of radium applied to the spleen, for two days, have induced marked improvement in a week, and temporary recovery in a month. Two women thus had the blood findings restored to practically normal. Two women with myeloid leukemia treated with radium, became pregnant later, and one gave birth to a full term normal child; in the other case there was premature labor. After radium treatment, patients have survived from two to four years, and even longer. Benzene and thorium may be of benefit when used alone, or supplementary to radium and roentgen ray. Benzene has to be used very cautiously as it may induce toxic by-effects.

Intravenous Injections of Sodium Salicylate.—Carnot and Blamoutier report good results from intravenous injections of sodium salicylate in acute rheumatism and epidemic encephalitis. Small doses of the drug (0.20 or 0.40 Gm. in a 4 per cent solution), given intravenously, induce an effect equal to that from tenfold the dose given by the mouth. It is indicated in rheumatic patients who do not tolerate the salicylate by the mouth or have a failing myocardium. Medium doses (1 or 3 Gm.) may be given to prevent involvement of the endocardium. Doses above 3 Gm. are used with grave complications. In a grave form of epidemic encephalitis from 4 to 6 Gm. of the salicylate was given daily in two or three intravenous injections; from 1 to 4 Gm. in milder forms of the disease. The injections should be continued long after the morbid phenomena have disappeared, and should be periodically repeated. The injections were without action in postencephalitic sequelae. Good results were obtained in four cases of grave epidemic encephalitis, given this injection treatment early.

Malaria Treatment of General Paralysis.—Fribourg-Blanc summarizes the experiences of others and reports three personal cases. One patient died, but the improvement was remarkable in the other two cases. The incubation was ten days in all before the first febrile attack. The malaria was promptly arrested at the proper moment. The fatal case was practically moribund when treated.

Presse Médicale, Paris

33: 1633-1648 (Dec. 12) 1925

*Contraction of the Spleen. P. Pagniez et al.—p. 1633.
*Treatment of Surgical Tuberculosis. A. Finikoff.—p. 1634.

Contractility of the Spleen.—Pagniez, Coste and Escalier's experiments were conducted on chloralosed dogs. An intravenous injection of 0.0005 Gm. of epinephrine was followed after twenty seconds by contraction of the spleen, with reduction of the organ to one third or one fourth its former size. The contraction persisted a few minutes; then the spleen gradually regained its normal size within six or seven minutes. An extract of the posterior lobe of the pituitary (1 cc.) produced a notable contraction of the spleen, but less pronounced than that from epinephrine; with a mixture of epinephrine and pituitary extract the contraction was strong and durable. Intravenous injection of 0.001 Gm. of strychnine, used once, had no effect on the spleen. The contraction appeared to be due to a direct action of the epinephrine on the spleen parenchyma. The number of leukocytes was unchanged in the blood expelled by the contracting spleen, while that of the red corpuscles was greatly increased. Intramuscular injection of 0.001 Gm. of epinephrine in a patient with malaria induced contraction of the spleen in five minutes; the maximal effect in fifteen. The same injection in cases of leukemia or sarcoma of the spleen did not induce contraction of the organ. A mere congestion of the spleen may thus be differentiated from lesions of the parenchyma. Blood cultures were tried in several cases of suspected septicemia, before and half an hour after an injection of epinephrine. No passage of bacilli into the blood could be detected; but imperfect technic may have been responsible for the negative findings.

Treatment of Surgical Tuberculosis.—Some of Finikoff's experiences were summarized recently on page 313.

33: 1649-1664 (Dec. 16) 1925

*Peptone in Treatment of Asthma, Spasmodic Coryza and Hay Fever. Pasteur Vallery-Radot et al.—p. 1649.
*Rest Treatment of Obesity. G. Leven.—p. 1651.
*Ultraviolet Rays in Surgery. F. Masmonteil.—p. 1652.
Modern Theories of Paranoia. M. Nathan.—p. 1653.
Influence of Suggestion on Alopecia Areata. Bonjour.—p. 1659.

Success with Intradermal Injection of Peptone in Treatment of Asthma, Hay-Fever and Spasmodic Coryza.—Reviewed in the Paris Letter.

Treatment of Obesity.—Leven emphasizes that not physical exercise, but bed rest should be prescribed in treatment of obesity, in addition to appropriate diet and respiratory exercises. He trains the patient to make a slight inspiration through the nose, followed by a prolonged expiration, blowing enough to bend the flame of a candle, without blowing it out. These expiratory exercises are possible in the reclining, seated or erect attitude. Series of five successive expirations are repeated every half hour, to a total of from fifteen to twenty in a day. In one among other cases, the loss of weight reached 7 Kg. in twenty days, in another 27 Kg. in the course of eight months. The theory on which this rest-diet-breathing exercises treatment is based, is that irritation of the solar plexus, from overeating or other cause, may disturb the functioning of the cerebral center regulating the destruction of fats.

The Ultraviolet Rays in Surgery.—Masmonteil extols the results from ultraviolet rays in tuberculosis of the peritoneum, glands, cold abscess, fistulas and joint lesions, also in Pott's disease. He declares that recovery occurs in 80 per cent of the patients. No effect was obtained in cases with suppuration. The ray treatment should be combined with calcium, arsenicals, iodid, or injections of oxygen. The rays are also indicated in chronic, nontuberculous inflammations, such as postoperative adhesions, epiploitis, perigastritis or pericholecystitis. The ultraviolet rays appeared beneficial in chronic arthritis, and yielded surprising results in rickets. The rays proved effectual also in sterilization of the field of operation. With this method there were no complications (miliary tuberculosis or meningitis). The rays are also indicated in postoperative treatment of tuberculous lesions with defective healing. In deeply located lesions, the ultraviolet rays may be advantageously combined with roentgen rays; their action may be also increased by the infra-red rays.

Schweizerische medizinische Wochenschrift, Basel

55: 1149-1172 (Dec. 17) 1925

*Venereal Diseases in Basel. P. Vollenweider.—p. 1149.
Treatment of Perforation Peritonitis. W. Isler.—p. 1158.
Diathermy in Gynecology. R. L. Rochat.—p. 1159.
Specialists and Specialties. H. R. Schinz.—p. 1162

Venereal Diseases in Basel.—Vollenweider finds an improvement in the conditions in 1920-1921 as compared with 1881. The main cause is the better use of preventive measures.

Archivio Italiano di Chirurgia, Bologna

14: 225-336 (Sept) 1925

*Pulsating Exophthalmos. B. Baroni.—p. 225.
*Thyroid Tumors in Bones. V. Ferrero and G. Sacerdote.—p. 274.
Internal, Oblique Inguinal Hernia from Clinical Standpoint. G. B. Macaggi.—p. 289.
*Resection of the Liver. M. Fasano.—p. 301.
*Results of Albee Operation on the Spine. D. Giorgacopulo.—p. 305.

Pulsating Exophthalmos.—Baroni adds another to the 345 cases of pulsating exophthalmos he has found on record. A scrap of a shell was responsible for the jugular-carotid aneurysm in his case.

Thyroid Tumors in Bones.—Ferrero and Sacerdote remark that there are only a little over 100 published instances of metastasis in bones from tumors in the thyroid or parathyroids. In certain cases the metastasis was malignant while the primary tumor seemed to be benign, and vice versa. In one of two personal cases, the metastases from the adenocarcinoma of the thyroid were in the humerus and the scapula, and had grown rapidly before the primary tumor had become manifest. The primary small carcinoma in the thyroid was discovered only at necropsy. In the other case, a tumor of parathyroid structure had developed in the femur. The physician was consulted on account of pains in the right thigh, and during his examination the femur fractured. The fracture healed in the normal period. This patient was a woman, aged 65, who for fourteen years had noted a small tumor in the right neck region. One month after the fracture there was metastasis in the right temporal bone. Both metastases seemed to be of benign nature.

Resection of the Liver.—Fasano's patient, a woman, aged 51, seems to be in the best of health now, five years after he resected nearly the whole of Riedel's lobe of the liver, as it was involved in an inflammatory process in and around the gallbladder. He cut out a wedge, 15 cm. at the base. In three other cases he restored the sagging liver to place, thus correcting stenosis of the duodenum for which the hepatoptosis had been responsible. In a recent cancer case he resected two thirds of the stomach and the involved margin of the liver.

Ultimate Results of the Albee Operation in Spondylitis.—Nineteen cases are described and the end results qualified as "more than satisfactory." It can be said as a general experience that the mortality in the operative cases is less than in others.

Pediatria Archivio, Naples

1: 125-384, 1925

*Cerebral Paralysis in Children. A. De Capite.—p. 125.
*Diphtheria in Children. P. Ritossa.—p. 330.
Complement Fixation in Tuberculosis. L. Consiglio.—p. 353.

Cerebral Paralysis in Children.—De Capite devotes 190 pages to a review of the pathologic symptoms and treatment of paralysis of cerebral origin in children, and adds twenty pages of bibliography.

Diphtheria in Children.—Ritossa finds that the frequency and gravity of diphtheria in Rome have increased in the last two years. Substandard children, especially those with tuberculosis and congenital syphilis, are especially prone to it. Early administration of large amounts of antitoxin and intubation have helped to keep the mortality down to 16 per cent.

Policlinico, Rome

32: 589-632 (Dec. 1) 1925. Medical Section

*The Thymus in Relation to Tetany. G. Macciotta.—p. 589.
Spontaneous Gangrene of the Limbs. E. Venezian.—p. 606.
Foreign Bodies in the Esophagus. A. Stefani.—p. 616.
Disease of the Colon in Cholecystitis. M. La Torre.—p. 622.

The Thymus in Relation to Tetany.—Macciotta removed the thymus in ten young rabbits (five survived) and one dog. No tetany was produced. The alkalinity of the plasma was lowered. The elimination of calcium and magnesium and their concentration in the plasma were increased. Their concentration in the tissues was lowered. Therefore a hypofunction of the thymus may play a rôle in rickets or fragility of bones, while a hyperfunction might be one of the factors in tetany. Removal of the parathyroids in his animals produced fatal tetany.

Riforma Medica, Naples

41: 1157-1180 (Dec. 7) 1925

Cancer and Cholelithiasis. D. Giordano.—p. 1157.
Herpes Zoster and Chickenpox. C. Maderna.—p. 1160.
Extrapleural Thoracoplasty. L. Rieppi.—p. 1163.
Value of Antibodics. A. D'Istria.—p. 1172.
"Antagonism of Superficial and Visceral Arteries." Baroni.—p. 1176.
*Napoleon's Narcolepsy. A. Salmon.—p. 1177.

Napoleon's Narcolepsy.—Salmon describes the grave somnolency from which Napoleon frequently suffered in the last years of his life, and which is said to have been partly responsible for his defeat at Waterloo. Salmon quotes the reports on the obesity and the atrophy of the testes which developed in Napoleon, and agrees with Guthrie in the diagnosis of adiposo-genital dystrophy due to some pituitary lesion. The tendency to somnolency sustains this assumption.

Crónica Médica, Lima

42: 289-320 (Oct.) 1925

The New Loayza Hospital. E. Bello.—p. 290.
*Spirochetal Bronchitis. A. Alvarez López.—p. 295. C'td.
Common Bile Duct Accidentally Cut Across During Cholecystectomy; Immediate Suture; Recovery. C. Villarán.—p. 307.

Spirochetal Bronchitis.—Alvarez López reviews the history of Castellani's spirochetosis, saying that cases have been published in nearly all the Latin American countries. He adds a third case to the two already published in Peru.

Gaceta Médica de Caracas

32: 177-192, 1925

Obliterating Lymphangitis and Cellulitis. R. Freytes Pineda.—p. 177.
Autovaccine in Chronic Tubal Otorrhea. E. Conde Flores.—p. 178.
*Three Cases of Actinomycosis. J. B. Jiménez.—p. 180.
*Spirochetal Bronchitis. A. J. Fernández.—p. 182.

Actinomycosis in Venezuela.—Jiménez describes three cases of actinomycosis of the thorax or jaw. In one chest case the boy died before the nature of the process had been recognized. All had occasion to handle grain and hay.

Spirochetal Bronchitis.—In one of the three cases described, the tubercle bacillus was associated with Castellani's spirochete. Fernández believes that the spirochetosis was the primary disease in this case.

Revista de Cirugía, Buenos Aires

4: 193-240 (Oct.) 1925

*Enchondroma in Long Bones. Sara Satanowsky.—p. 195.
Hydatid Cysts in Muscles and Cellular Tissue. R. Rodriguez Villegas.—p. 211.
*Operative Treatment of Pancreatic Cyst. Alberto Gutiérrez.—p. 223.
Tumor in Umbilicus from Migrating Fishbone. P. Chutro.—p. 231.
Tuberculosis of Mesenteric Glands in Two Children. L. de Goiri.—p. 234.
Partial Scapulectomy for Osteofibroma. P. Jauregui.—p. 238.

Enchondroma of Long Bones.—In the first of the two cases described by Satanowsky there was a history of trauma involving the boy's leg at the age of 4. The enchondroma of the lower third of the femur was excised at the age of 10. In the other case the enchondroma was in the upper third of the tibia of a boy, aged 12, and there was a history of trauma of the region three years before. The enchondroma showed sarcomatous degeneration in this case. The hardness of the tumor and the slow evolution might aid in differentiation from a simple cyst which the roentgenogram might otherwise suggest.

Pancreatic Fistula Consecutive to a Cyst.—Gutiérrez's eight illustrations, some of them in colors, show the cyst between the stomach and the liver, before its removal, and the various steps of implantation of the pedicle in the stomach. The long pedicle of the round cyst originated in the pancreas, and after voiding its contents, the pedicle was fastened to the skin. It secreted profusely, and four months later he cut it away from the skin, and passing slender forceps through the nearest portion of the stomach, he grasped the cut end of the pedicle tube and drew it down into the sagging stomach, and fastened it, thus implanting it in the stomach. Two months after this second operation the patient, a woman of 28, had gained 5 pounds and was free from all disturbances.

Revista Española de Medicina y Cirugía, Barcelona

8: 621-682 (Nov.) 1925

Caustic Injuries of the Esophagus. R. Botey.—p. 621.
*Manifestations of Tuberculosis in the Eyes. Vidal Fraxanet.—p. 628.
Endemic Goiter. J. Salvat Marti.—p. 632.
Therapeutic Anaphylaxis Treatment of Chronic Noncontagious Disease (with Entero-Antigens). D. Moxó.—p. 638.

Tuberculosis of the Eye.—Vidal Fraxanet comments on the unsuspected prevalence of ocular tuberculous lesions. We are now able with the microscope to detect them in their incipiency. He describes the clinical picture in ten typical cases, and the prompt and lasting benefit from tuberculin and general sanatorium treatment.

Revista Médica de Barcelona

4: 329-424 (Oct.) 1925

Necessity for Insistence on Lactation in Maternities. Brossa.—p. 334.
Necessity for Restricting Puncture of the Pouch of Douglas to the True Indications for It. M. Garriga Roca.—p. 340.
Experiences with Sanocrysin at Barcelona. L. Sayé.—p. 344.
*Addition of Hexamethylenamin to Vaccines. E. Alvarez Sainz de Aja.—p. 374.
Recent Advances in Urinary Surgery. D. N. Eisendrath (Chicago).—p. 376.

A Preservative in Gonococcal Vaccines.—Alvarez Sainz de Aja says that the disappointing variability of the action of gonococcus vaccines can be overcome by using a preservative in the vaccine. He confirms the efficacy of hexamethylenamin for this purpose. Vaccines treated with it gave better therapeutic results with less than a quarter of the gonococci in the ordinary vaccine, and in much smaller doses. He is now testing the addition of hexamethylenamin to staphylococcal and other vaccines. He queries whether the hexamethylenamin may not have a specific action of its own, in addition to the preservative action.

Revista Médica del Rosario

15: 181-242 (Aug.) 1925

*Spinal Lymphocytosis in Cardiovascular Disease. C. Alvarez and T. Fracassi.—p. 181.
Melanic Epithelioma with Multiple Metastases. Staffieri and Ruiz.—p. 109.

Lymphocytosis in the Cerebrospinal Fluid in Heart Disease.—In thirty-three patients examined, Alvarez and Fracassi found the lumbar puncture spinal fluid normal in all but four, and these four presented the Argyll Robertson sign, and this sign was not positive in any of the others. The positive cases were all instances of aortitis with aortic insufficiency. Mere inspection of the pupils will answer the desired purpose, without the necessity for lumbar puncture, in such cases.

Revista Médica del Uruguay, Montevideo

28: 193-221 (July) 1925

Sequelae of Epidemic Encephalitis in Children. M. A. Jaureguy.—p. 193.
*Oleothorax in Treatment of Spontaneous Pneumothorax. A. Sarno.—p. 200.

Spontaneous Pneumothorax Treated with Injection of Medicated Oil.—Sarno relates that the outcome has been excellent in one case of tuberculosis of one lung, of a year's standing. Hydropneumothorax had developed, and the dyspnea was intense. About 200 cc. of a medicated oil was then injected and repeated, to a total of 900 cc. of oil in twelve days. The symptoms subsided, and the patient has gained in weight, and feels well. There is still an accumulation of fluid at the base of the collapsed lung with a little air above. In two other cases, both bilateral, the condition was aggravated by the injection of oil, and further treatment was suspended at the fourth and third injection. This treatment seems to be indicated only when the lesions are unilateral and the opening small.

Revista de la Soc. Arg. de Oftalmología, Buenos Aires

1: 25-55 (Oct.) 1925

Case of Hyaline Excrescences in the Eye: Drusen. L. Dodds.—p. 25.
*Detachment of the Choroid. F. Belgeri and Lijo Pavia.—p. 28.
Degeneration of Cornea in Network Form. E. Adrogue.—p. 32.
Extra Ocular Hernia of the Vitreous Body. Lijo Pavia.—p. 40.
*Diagnosis of Supranuclear Paralysis of the Motor Nerves of the Eyes. E. Adrogué.—p. 49.

False Detachment of the Retina.—Belgeri and Lijo Pavia had diagnosed detachment of the retina in the man, aged 61, but the slit lamp corrected the diagnosis to detachment of the choroid. There were no folds in the protruding portion, and it had seemed stiffer than the detached retina.

Supranuclear Paralysis of the Motor Nerves of the Eyes.—Adrogué has encountered in certain cases of tabes or epidemic encephalitis a paralysis of the external rectus without diplopia or convergent strabismus; convergence is normal, but the outward excursion of the eyeball is much restricted. The lesion responsible for the paralysis seems to be located above the center for the movements of the eyes. The effect is usually felt in only one eye, and in only a single movement of the eye. With the rotation test, only one eye shows the characteristic nystagmus, and only one eye sees objects as if moving.

Revista de la Soc. de Medicina Interna, Buenos Aires

1: 429-461 (Sept.) 1925

*Hemiplegia in Artificial Pneumothorax. M. R. Castex and N. Romano.—p. 433.
Infected Gastric and Duodenal Ulcers. P. Escudero.—p. 439.
*Kidney Function Tests. R. A. Bullrich and A. L. Digiorgio.—p. 449.
*Viscosimetric Index in Pulmonary Tuberculosis. C. Bonorino Udaondo and M. M. Casteigts.—p. 454.
Case of Broncholithiasis. A. A. Raimondi.—p. 458.

Hemiplegia in the Course of Therapeutic Pneumothorax.—At the third filling, the young woman seemed to bear the injection of air without disturbance, the pressure minus 1. When 250 cc. of air had been reached, the pressure jumped to plus 10, and the injection was suspended as she complained of brief pain. A few minutes later there was a convulsion of one side of the body, the head and eyes twisted to the right, and clonic and tonic spasms in the right arm and leg, passing into complete hemiplegia. Beginning the twenty-fourth hour, the hemiplegia gradually subsided. The facial paralysis was the last symptom to disappear, traces of it being still perceptible two weeks later. Castex and Romano ascribe the mishap to gas embolism, and the favorable outcome to the fact that the gas happened to be air.

Kidney Function Tests.—Bullrich and Digiorgio combined the Volhard diuresis test with the phenolsulphonphthalein test, injecting the stain as the patient began to drink the 1,500 cc. of water or warm infusion. The findings in eighteen cases showed a remarkable parallelism; both tests seem to involve the circulation in the kidney. The association of the two tests is more interesting than either alone, although they seem to have the same biologic import.

The Viscosimetric Index in Pulmonary Tuberculosis.—In fifteen normal subjects, the Hess viscosimeter showed the viscosity quotient to average 2.1, the range being from 1.7 to 2.5. In fifteen patients with mild pulmonary tuberculosis, the index ranged from 2.1 to 3.1, averaging 2.6. In forty-nine with advanced tuberculosis, the average was 4.1.

Deutsche medizinische Wochenschrift, Berlin

51: 2059-2100 (Dec. 11) 1925

Hypertension. P. Fleischmann.—p. 2059. C'td.
*So Called Traumatic Neuroses. E. Stier.—p. 2062. C'cn.
*Polyneuritis After Wound Diphtheria. Reinhold.—p. 2064.
*Liver—Syphilis—Arsphenamine. W. B. Meyer.—p. 2066. C'cn.
Action of Irritants on the Skin. R. Stahl.—p. 2069.
Meningitis, Tubercle and Paralysis Agitans. H. Deist.—p. 2070.
Treatment of Pulmonary Tuberculosis. B. Fujimoto.—p. 2072.
Fracture of Styloid Process. K. Specht.—p. 2074.
Scarlatinal Lymphangitis. W. M. Werzblowsky.—p. 2075.
Syphilis and the Cerebrospinal Fluid. H. Förtig.—p. 2076.
Pepsin Secretion. P. Hirsch Mamroth.—p. 2078.
Pupils and Cataract in Tetany. Eugen von Rutich.—p. 2079.
Pure Light Lamp. W. Taschenberg.—p. 2081.
Blood Transfusion in Surgery. H. Wildegans.—p. 2081.
Occupational Hygiene. R. Müller.—p. 2083. C'cn.
Comment on the Decision of the Berlin Medical Faculty in Retaliation for the Exclusion of German Scientists from Entente International Gatherings. J. Schwalbe.—p. 2086. See News item, p. 209.

So-Called Traumatic Neuroses.—Stier examined fifty telephone operators who were receiving a pension or yearly allowance for traumatic neurosis due to alleged injuries by the telephone current. His advice was to discontinue every allowance—and forty-seven of them submitted to this without any attempts to modify the decision to this effect. It is interesting to draw a parallel between the sequels of injury in insured persons and in those who cannot derive any advantage from the traumatism. A strict and expert examination of such individuals, and especially of the shellshock cases who want to keep on drawing advantage from it even after the war, together with fair (not lenient) court decisions not only realizes great savings of public and private funds but also raises the level of public morals.

Polyneuritis After Wound Diphtheria.—Reinhold's patient was infected with diphtheria localized in the wound after cholecystectomy. She developed paresis of accommodation and of the uvula three weeks later. This shows that the latter paralysis is not due to the usual localization of the diphtheria.

Liver—Syphilis—Arsphenamine.—Meyer attributes the grave affections of the liver, observed during treatment for syphilis, exclusively to the disease. Arsphenamine is not dangerous and is directly indicated in these cases.

Klinische Wochenschrift, Berlin

4: 2377-2424 (Dec. 10) 1925

Percussion of the Aorta. H. Elias.—p. 2377.
*Vitamin Content of Human Milk. L. F. Meyer and E. Nassau.—p. 2380.
*Isohemagglutination. G. H. Schneider.—p. 2383.
Oligodynamic Action. J. Voigt.—p. 2387.
*Alkaptonuria. H. Baar and P. Freud.—p. 2388.
*Significance of Vitamin A Group. G. von Wendt.—p. 2389.
Ultraviolet Rays and Gastric Secretion. P. Keller and M. Loeb.—p. 2390.
*Treatment of Septic Diseases. R. Stahl and H. Nagell.—p. 2392.
*The Skin in Diabetes. E. Jürgensen and K. H. v. Noorden, Jr.—p. 2395.
*Metabolism of Cancer Cells. O. Warburg.—p. 2396.
Active Immunization Against Diphtheria. Opitz.—p. 2397. Reply. Kochmann.—p. 2397.
*Pituitary Hormone in the Cisterna. J. Jánossy and B. Horváth.—p. 2397.
Surface Tension. D. Adlersberg and O. Sternberg.—p. 2398.
Source of Error in Wassermann Reaction. E. Pieper.—p. 2399.
*Levulose Diabetes. S. Steinberg and W. Elberg.—p. 2399.
Inexpensive Treatment of Epilepsy. W. Weygandt.—p. 2400.

Postgraduate Training in Occupational Diseases. B. Chajes.—p. 2404.
Social Problems of Psychotherapy. W. Eliasberg.—p. 2407.
Liver Function Test. H. Kähler.—p. 2421.

Vitamin Content of Human Milk.—Meyer and Nassau repeated Frank's experiments on feeding young guinea-pigs with oats and woman's milk. While confirming the fact that the animals die under this diet, they saw no indication whatever of scurvy in them. When investigating the cause of death, they found that the amount of proteins they administered with the human milk was too small for the requirements of the rapidly growing guinea-pigs. Guinea-pig milk contains threefold more proteins than human milk. Addition of a protein to the diet prevented the death of the guinea-pigs. Consequently, woman's milk contains a sufficient amount of vitamin C.

Isohemagglutination.—Supplementary to some statistical studies, Schneider determined the blood groups in 198 mothers and children. The groups were identical in 112 instances (60 per cent). No case of eclampsia was encountered among those with this congruence of the blood group. Among the eighty-two cases with different blood groups, there were seven cases of eclampsia.

Alkaptonuria.—Baar and Freud injected serum or milk in an infant, 10 months old, with alkaptonuria. The excretion of homogentisic acid dropped after every injection.

Significance of Vitamin A Group.—Wendt measured and weighed 15,000 children between the ages of 11 and 16 in Finland. He found the greatest increase in length between June and September; the least from February to May, inclusive. The maximum increase in weight occurred from October till January; the lowest from February till May. He discusses the possible relation to the vitamin content of the food and to sunlight.

Treatment of Septic Diseases.—Stahl and Nagell prepared autogenous vaccines from a few patients with chronic infectious endocarditis. They injected these autovaccines partly in the patient, partly in healthy subjects, and used their serum for treatment. They obtained remissions resembling actual cures in three of the five cases.

The Skin in Diabetes.—Jürgensen and von Noorden, Jr., observed in diabetes patients an acceleration of the capillary circulation for four to six hours after injections of insulin. After this the capillaries dilate and the blood stream slows up. The sweat glands seem to be excitable in the early stages of diabetes, and depressed in the later.

Metabolism of Cancer Cells.—Warburg points out that Bauer and Nyiri's failure to obtain glycolysis with human cancer cells was probably due to the low concentration of bicarbonate they used.

Pituitary Hormone in the Cisterna.—Jánossy and Horváth found that the cerebrospinal fluid obtained by cisterna puncture—even when diluted six times—always induced contractions of the virginal rat uterus. The fluid obtained by lumbar puncture had a much weaker action, if any. They consider this another proof of the presence of pituitary secretion in the cerebrospinal fluid.

Levulose Diabetes and Fructogen Formation.—Steinberg and Elberg observed levulosuria in two sisters and a brother. Diabetes had been frequent in the three preceding generations. The glucose tolerance was good; injection of epinephrine produced neither glycosuria nor levulosuria; injection of phlorhizin, only glycosuria. The blood gave a distinct levulose reaction after ingestion of cane sugar. The authors believe that the main disturbance is in the fructogen-forming property of the liver (glycogen formation from levulose). The patients are able to work, and have practically no complaints due to the disease.

Medizinische Klinik, Berlin

21: 1869-1908 (Dec. 11) 1925

*Syphilis and Plastic Linitis. H. Strauss.—p. 1869.
Metastasis of Goiter. Dreesmann.—p. 1871.
*Postvaccination Encephalitis. R. Kraus and J. Takaki.—p. 1872.
Food Poisoning by the Proteus. P. Wichels and W. Barner.—p. 1880.
The Blood After Burns. K. Schreiner and O. Pucsko.—p. 1882. C'td.
Avian Tuberculosis in Man. I. Deutsch.—p. 1884.
Kidney Cyst Simulating Peritonitis. Istvan von Gönczy.—p. 1885.
Autochthonous Tropical Malaria. L. Winkler.—p. 1886.
Serodiagnosis of Pregnancy. H. Munter and E. Gräfenberg.—p. 1889.
Hemolytic Colon Bacilli in the Intestines. R. Klingenstein.—p. 1891.
Irradiation Treatment of Enlarged Glands. H. Holfelder.—p. 1895. C'tn.

Syphilis and Plastic Linitis.—Strauss finds that syphilis of the stomach is rare. Yet it is so important that he advises treatment in every case of diagnosed tumor with the slightest possibility of a syphilitic origin. The Wassermann test was negative in his case in which the success of specific treatment confirmed the nature of the disease as a tumor-forming syphilitic disease of the stomach. The main thing is to "start wondering in time."

Postvaccination Encephalitis.—Kraus and Takaki's experiments proved that the encephalitis observed recently after vaccination against smallpox is not due to the vaccine. It is possible, however, that the vaccination activates the latent virus. The use of small doses of killed vaccine virus (subcutaneously or intracutaneously) might prevent such complications.

Münchener medizinische Wochenschrift, Munich

72: 2133-2176 (Dec. 11) 1925

*Means to Soften Scar Tissue. W. Stoeltzner.—p. 2133.
*Idem. W. Stoye.—p. 2135.
*Manoilow's Sex Hormone. W. J. Popow.—p. 2139.
Heterotopic Fibro-Adenomatosis. H. Steichele.—p. 2141.
Xanthoprotein Reaction. Lemesic and Jovanovic.—p. 2142.
Psychogenic Incontinence. K. Ochsenius.—p. 2143.
Lipoids in Children. H. Much.—p. 2143.
Aortic Regurgitation from Congenital Syphilis. T. Hausmann.—p. 2147.
*Typhoid Cholecystitis. H. Schottmüller and E. Fraenkel.—p. 2150.
*Embolism in Striate Body. Schwartz and Goldstein.—p. 2154.
Functional Angina Pectoris. H. Kohn.—p. 2155.
*Mites in Feces. E. Hieronymi.—p. 2157.
Palatable and Digestible Food. F. Crämer.—p. 2157.

Means to Soften Scar Tissue.—Stoeltzner tested the softening action of various substances, including thiosinamine, rhodanides, potassium and choline on pieces of dura tissue. The best results were obtained with concentrated solutions of urea. They gave also good clinical results when injected under nonadherent scars. Stoye reports on his clinical experience. Injections of a few cubic centimeters of a concentrated solution of urea softened all the loose scars. They induced necrosis when the scar was adherent.

Manoilow's Sex Hormone.—Popow states that he had only 11 per cent incorrect results with Manoilow's sex test in seventy-one normal subjects. The percentage of failures was 35 in endocrine derangement. The blood of women with exophthalmic goiter gave a "male" reaction. This indicates that the stronger oxidative processes in the male might account for the normal results.

Typhoid Cholecystitis.—Schottmüller and Fraenkel discuss the clinical, pathologic and epidemiologic aspects of cholecystitis due to typhoid bacilli. The indications for cholecystectomy are the same as with any other etiology. The majority of typhoid carriers eliminate the bacilli by the intrahepatic biliary ducts—not by way of the gallbladder. Therefore the extirpation of the latter is unnecessary if the only indication for it is the fact that the subject is a bacilli carrier.

Embolism in Striate Body.—Schwartz and Goldstein observed in the last two years twelve cases of hemorrhages affecting electively the striate body—most of them its anterior upper part. The internal and external capsules were intact. The hemorrhages followed embolism—usually due to endocarditis.

Mites in Feces.—Hieronymi found with Kunze that *Tyroglyphus farinae* is innocuous for dogs. The gastric juice kills it very quickly. He believes that the same holds true for the occasional findings of the dead parasites in human stools.

Wiener klinische Wochenschrift, Vienna

38: 1349-1372 (Dec. 17) 1925

*The "Surgically Incurable" Ulcer. F. Mandl.—p. 1349.
Rupture of the Epigastric Artery. K. Blond.—p. 1352.
*Treatment of Lymphadenosis. S. Peschić.—p. 1354.
Alimentary Leukocytosis in Infectious Diseases. A. v. Torday.—p. 1356.
*Spasmodic Cough with Failing Heart. R. Wertheimer.—p. 1358.
Septic Infarction of the Lungs. K. Herman.—p. 1360.
Albuminuria. J. Donath. Supplement.—pp. 1-16.

The "Surgically Incurable" Ulcer.—Mandl points out that in rare instances the postoperative jejunal ulcer will recur in spite of radical measures. He applies to this condition the term "surgically incurable ulcer." He emphasizes by this only the prognosis.

Treatment of Lymphadenosis.—Peschić had surprisingly good results in eight cases of various enlargements of lymph nodes. His treatment consisted in a light diet and two or more doses of 0.15 Gm. of calomel daily. There was suspicion of syphilis in his opinion only in one case.

Spasmodic Cough with Failing Heart. — Wertheimer observed attacks of cough, connected sometimes with a sensation of a foreign body in the larynx, in a few patients who showed soon afterward distinct signs of insufficiency of the heart. He attributes these attacks to nervous projections of changes in the tonus of the heart muscle.

Zentralblatt für Chirurgie, Leipzig

52: 2865-2928 (Dec. 19) 1925

Penile Dislocation of the Testis. W. Kausch.—p. 2866.
Illumination of Operating Room. L. Drüner.—p. 2869.
*Shenton's Line. C. Renner.—p. 2875.
*Retrogression of Malignant Tumors. F. Erkes.—p. 2877.
Calcification of the Pleura. P. Esau.—p. 2878.
*"Transplantation of Blood Vessels." A. Zabludowski.—p. 2882.

Shenton's Line.—Renner demonstrates the usefulness of Shenton's line, connecting in roentgenograms the lower margin of the neck of the femur with the upper margin of the obturator foramen, the whole forming an arc. The line appears broken in upward dislocation of the hip joint.

Retrogression of Malignant Tumors.—Erkes made gastroenterostomy in a patient suffering from a large inoperable tumor of the stomach. Histologic examination of an extirpated lymph node revealed cancer. The patient recovered completely. The region was reinspected four years later, when a supravaginal amputation of the myomatous uterus became necessary.

"Transplantation of Blood Vessels."—Weglowski reported in number 40 of this *Zentralblatt* on forty-seven successful transplantations of veins among fifty-one he alleged to have made. He mentioned besides this that he had written a series of articles on the subject in the Russian and Polish languages. Zabludowski states that this author has not published anything on the subject in Russian literature, and that on account of the deplorable results of most of his interventions during his work in Moscow, he had been forced to discontinue them.

Zentralblatt für Gynäkologie, Leipzig

49: 2865-2928 (Dec. 19) 1925

Mechanism of Torsion of Organs. O. Lindig.—p. 2876.
*Sequels of Eclampsia in Mothers and Children. R. Bund.—p. 2879.
*Blood Groups in Mothers and Children. V. Ohnesorge.—p. 2884.
Unilateral Hematometra. A. Sohn.—p. 2890.
"Changes in Vaginal Acidity." H. Gänssle.—p. 2893.
Ectopic Decidua in the Cervix. M. Samuel.—p. 2893.
Serum Stability in Gynecology. A. v. Probstner.—p. 2894.
Chorea of Pregnancy. C. Jakoby.—p. 2897.
Perforation of Abscess in Labor. P. Braun.—p. 2905.
Extra-Uterine Pregnancy. A. Kuncz.—p. 2907.
Manual Removal of Placenta. M. S. Naiditsch.—p. 2916.

Sequels of Eclampsia in Mothers and Children.—Bund surveys material consisting of seventy-six women with one or more attacks of eclampsia. He rates the probability of its recurrence in a subsequent pregnancy at 20 per cent. Chronic nephritis developed later in 10 per cent and epilepsy in 4 per cent of the women. Thirteen per cent of the children died in the first few weeks. Later than this, the prognosis for the child is good.

Blood Groups in Mothers and Children.—Ohnesorge's data include 302 pregnant women and 250 children (including nine pairs of twins). The congruence or incompatibility in the blood groups in mother and child seems to have no connection with the development or sex of the child nor with the toxicoses of pregnancy. He tested the corpuscles from ten fetuses of the fourth to the sixth month. There was no agglutination in seven cases. Two fetuses of the fourth and one of the fifth month belonged to group II.

Zentralblatt für innere Medizin, Leipzig

46: 1217-1232 (Dec. 19) 1925

Action of Injections on the Blood Pressure. F. Doenecke.—p. 1217.

Grèce Médicale, Athens

27: *33-40 (Oct.) 1925*

Terrien's Peripheral Ectasia of the Cornea. A. Trantas.—p. 33.
*Acute Postoperative Spastic Ileus. T. Astériadès.—p. 37.

Acute Postoperative Spastic Ileus and Its Treatment by Intraspinal Anesthesia.—Summarized in these columns, Dec. 19, 1925, p. 1999, when published elsewhere.

Prophylaktitcheskaia Medicina, Kharkov

4: 1-204 (Nov.) 1925. Partial Index

Experimental Pathology of Smallpox Vaccine. I. Gakh.—p. 5.
*Immunization Against Diphtheria. M. Gluzman.—p. 15.
*Cultivation of the Diphtheria Bacillus. Y. Tchebotareva.—p. 22.
*Convalescent Serum in Prophylaxis of Scarlet Fever. A. Skrotzky and M. Bardakh.—p. 28.

Active Immunization Against Diphtheria.—Gluzman experimented on twenty-nine guinea-pigs with mixtures of diphtheria toxin with antitoxin. There was evidence that only a mixture, in which not quite all of the diphtheria toxin was neutralized by the antitoxin, induced active immunization against several lethal doses of toxin, or virulent diphtheria cultures. The development of the immunity did not depend on the number of injections, but on the proportions of the toxin and antitoxin in the mixture. A mixture was considered effectual and well tolerated when a dose of 1 cc. did not cause local or general phenomena, nor tardy paralysis, in guinea-pigs. A dose of 5 c.c. of this mixture caused marked infiltration in them. This mixture was used in ninety-nine children, from 2 to 15 years old, with a positive Schick test. The first injection contained 0.5 c.c. of the mixture; the second, given eight to fourteen days later, 0.5 or 1 cc. Except in three, the reaction was only local; it disappeared on the third day. Schick control tests, applied after three or four months in sixty-five thus inoculated, were negative in all but four. Gluzman emphasizes that only this hyponeutral mixture gave positive results, while those from neutral or hyperneutral mixtures were negative.

Comparative Value of Culture Mediums for the Diphtheria Bacillus.—Tchebotareva's research on seven culture mediums used for cultivation of the diphtheria bacillus, showed that Klein's medium may be considered as the most satisfactory. It is absolutely sterile; transparent; nutritive enough for the growth of the bacillus, and possesses an elective property for the diphtheria bacillus, thus allowing its isolation. To 9 parts of the serum is added 1 part of a 15 per cent solution of sodium hydroxid. It is neutralized with hydrochloric acid and mixed with 4 parts of agar. In eighteen positive cases with the Löffler culture medium, the findings with the Klein culture medium harmonized in all but two.

Convalescents' Serum in Prophylaxis of Scarlet Fever.—Skrotzky and Bardakh believe that the serum from scarlet fever convalescents may be the most efficient method for immunization against scarlet fever. They used the serum from convalescents, aged from 6 to 15 years, on the fifth or sixth week of the disease or on the fourth week in cases with uremia. To each 20 cc. of the serum was added 0.5 or 1 cc. of chloroform, or 1 cc. of a 5 per cent solution of phenol. Usually two or three serums were mixed. The injections were made in the gluteus muscle, 10 cc. up to the age of 12, and 12 or 15 cc. up to 15 years. Ninety-four children, in contact with scarlet fever patients, were inoculated. None except two injected at the end of the incubation period, contracted the disease, and these in a mild form. Every district, they say, should have arrangements for obtaining scarlet fever serum for prophylactic purposes.

Finska Läkaresällskapets Handlingar, Helsingfors

67: 929-1039 (Nov.) 1925

*Endocrine Derangement in Congenital Syphilis. A. Cedercreutz.—p. 929.
*Prognosis with Hypertension. R. Ehrström.—p. 939.
*Study of Case of Recurring Urticaria. K. Lindberg.—p. 943.
Sedimentation Test in Pulmonary Tuberculosis with Artificial Pneumothorax. R. Gripenberg.—p. 974.

*The Metabolism During Dancing. G. Grönholm et al.—p. 985.
*Treatment of Postoperative Retention of Urine. S. Hjelt.—p. 990.
Race Biology and Race Hygiene as a Current Tendency of Science and Civilization. L. Ringbom.—p. 1000.
Care of Incarcerated Hernia. L. Gratschoff.—p. 1015.

Endocrine Disturbances in Congenital Syphilis.—Cedercreutz' article was briefly mentioned in these columns, Dec. 26, 1925, p. 2059. He emphasizes that organotherapy in time might ward off serious disturbances. He has combined thyroid treatment with arsphenamines or bismuth in a number of cases of parenchymatous keratitis, and the affection has subsided much more promptly and completely than under any other treatment. One patient with unilateral keratitis—under observation for four years—recovered under this combined treatment and the other eye escaped entirely. The deafness in congenital syphilis suggests involuntarily the deafness of cretins. Treatment of established Hutchinson labyrinthitis has little hope of benefit, but thyroid treatment in its incipiency or in prophylaxis might give good results in congenital syphilis. He advises it particularly with unilateral deafness in such cases.

Prognosis of Hypertension.—Ehrström has recently reexamined 300 patients with hypertension analyzed in 1918. In one group of twenty patients under observation for ten to sixteen years, the blood pressure has been constantly or with brief exceptions above 200 mm. of mercury, but they felt and looked well and were able to work most of the time. When hypertension begins at 50 and lasts for twenty years, the patient has already surpassed the average of life expectancy. The chances are about even as to whether a high blood pressure means a shortening of life or not. Even with heart disease, unexpected remissions or long tolerance are frequent. A history of syphilis tends to reduce the life expectancy with hypertension, but, on the whole, the fact that a patient has hypertension does not justify us in frightening him merely on account of the high blood pressure.

Research on Purine Metabolism.—The subject of Lindberg's experiments was a young man who for four years had been subject to recurring urticaria with fleeting edema. The metabolism was studied for sixty-seven days. On a purine-free diet for twenty-six days, the urticaria and edema subsided almost completely, while both flared up gravely anew when nucleic acid was given. The uric acid content of blood and urine was within normal range but the output in the urine was very much increased after ingestion of 10 Gm. of nucleic acid; a lesser increase was noted when alcohol had been taken, but alcohol alone did not seem to influence the elimination of uric acid, and the influence of epinephrine was conflicting. Calcium chloride reduced the output of uric acid.

The Metabolism in Dancing.—The metabolic findings with fifteen or thirty minutes of the waltz, the shimmy, the fox trot, the polka and mazurka were recorded at the Physiology Institute at Helsingfors. With the first two dances mentioned, the metabolism increased fourfold, and with the last two almost tenfold over the metabolism at rest. The exact figures are tabulated, and are compared with the metabolism findings with other forms of exercise. Even the least strenuous of these dances yielded 3.99 calories per kilogram-hour, while gymnastic exercises, according to Ling, yielded only 2 calories. Running, with 160 steps per minute, yielded 9.7 calories (Rancken) while the findings with the polka and mazurka were 10.87. The dancing was done in a confined space, without music, the time beat given by an electric apparatus. The findings, therefore, are probably minimal.

Postoperative Retention of Urine.—Hjelt relates that intravenous injection of 40 per cent solution of hexamine in 125 cases failed to elicit the desired response on the part of the bladder in only 8 per cent. The dose should never be more than 3 cc. and even with this spasm of the bladder or hematuria may be observed. Severe spasm persisting for hours occurred in five cases and hematuria in three. The hematuria persisted for a week in one. The urine was sterile in all in this group. The hexamine should not be given unless all other methods have failed and catheterization is impracticable, but it seems to be dependable then, and the disinfecting action is a further advantage in the experiences described.

Hospitalstidende, Copenhagen

68: 985-1000 (Oct. 29) 1925

*Subacute Inguinal Lymphogranulomatosis. A. Kristjansen.—p. 985. C'cn.

Subacute Inguinal Lymphogranulomatosis.—Kristjansen's conclusion from his analysis of the literature and personally observed cases is that this affection is an actual morbid entity, distinct from chancroid and similar lesions, but probably identical with the so-called climatic bubo.

68: 1001-1016 (Nov. 5) 1925

*Roentgen-Ray Treatment of Eczema. S. Lomholt.—p. 1001.
Imbecility as Indication for Tubal Sterilization. Petersen.—p. 1011.

68: 1017-1032 (Nov. 12) 1925

Anomalies in the Ureter Mouths. E. Holm.—p. 1017.
Cerebral Hemorrhage in Eclampsia. S. A. Gammeltoft.—p. 1025. C'td.

Roentgen-Ray Treatment of Eczema.—Lomholt relates that irradiation with roentgen rays at the Finsen Light Institute at Copenhagen failed to display any actual curative action but it had a very welcome symptomatic effect. It banished the pruritus, and the peace thus obtained gave the eczema a chance to heal under local measures. The effect was only symptomatic and did not last more than six or seven weeks in their 168 cases. Permanent recovery was observed in only fifty-eight; there was recurrence or renewed flaring up of the eczema in all the others. The scratching on account of the itching serves to maintain the eczema, hence the importance of the relief from the pruritus even if only for a few weeks. As there can be no hope of curing the affection with the rays, the irradiation should be mild and with ample intervals, to avert all possible danger.

Svenska Läkaresällskapets Handlingar, Stockholm

51: 159-206 (Nov. 15) 1925

*Korsakoff's Disease. H. Marcus.—p. 159.
Natural Anastomosis Between Splenic and Jejunal Arteries. A. Lennér.—p. 181.
*Diabetes and Insulin. F. G. Banting.—p. 189.
*Methods of Studying the Nervous System. R. Lorente De Nó.—p. 201.

Korsakoff's Disease.—Marcus remarks that the essential element in the autointoxication responsible for this disease is still a mystery, as also why it attacks only hard drinkers. He describes with minute detail nine cases in this instalment of his article.

Diabetes and Insulin.—This is the lecture delivered (in English) at Stockholm, Sept. 15, 1925, when Banting and Macleod were presented with the 1923 Nobel prize in medicine.

Modern Methods of Research on the Nervous System.—De Nó points out special sources of error in studying the nervous system. He specifies Ingvar's article "The Phylogenesis of the Interbrain" as based on mistaken premises.

Ugeskrift for Læger, Copenhagen

87: 1049-1072 (Nov. 26) 1925

*Menacing Obstetric Hemorrhage. P. Morville.—p. 1049.
G. Fracastoro, Physician and Poet, 1478-1533. J. W. S. Johnsson.—p. 1051.
*Epidemic Encephalitis from Psychiatric Standpoint. Winther.—p. 1055
"Tuberculin in Treatment of Asthma." A. H. Johansen.—p. 1056.

Grave Obstetric Hemorrhages.—In Morville's forty-seven cases of severe hemorrhage among 20,371 parturients, twenty-two died. These were mostly elderly multiparas with more or less pathologic labor. Seventeen died in the twenty-six cases in which the placenta was expelled immediately after the birth of the child, but only three of the eighteen in which there had been an interval of five minutes or more. Intra-uterine tamponade failed in all but two of the fourteen thus treated. Bimanual compression is usually required in addition.

Epidemic Encephalitis in Relation to Mental Disease.—Winther urges the necessity for some institution where children who have had epidemic encephalitis can get the disciplining and training they require. The records of the psychiatric service at Copenhagen, 1911 to 1919, show no instance in a child of mental disease that had been preceded by a sickness suggesting epidemic encephalitis, but since then there have been seven cases. They are sent from one institution to another, as they do not fit into the present plan of any, but they urgently need the proper care.

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THE SIGNIFICANCE OF CARDIAC EXTRASYSTOLES IN CHILDHOOD *

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Of the various arrhythmias encountered in the heart beat during childhood, that known as extrasystole is probably the least well understood. We find articles dealing with heart block, fibrillation, paroxysmal tachycardia and sinus arrhythmia, but there is very little in the literature dealing with the subject of extrasystole. In adults this particular form of irregularity is not uncommon; in fact, when one sees the table of age incidence of extrasystole given by Cowan and Ritchie,[1] one realizes that the condition is least common in childhood, comparatively rare below the age of 40, and not at all infrequent following that. Out of a total of 226 cases of extrasystole, only seven were present in individuals between the ages of 10 and 20, and none below the age of 10. This seeming rarity of the condition in childhood is only apparent, for if we deal with statistics concerning children only, we find that, though uncommon, this form of irregularity is not so exceedingly rare. Consequently, one must discount the statistics in books dealing with heart disease in general. For example, Thomas Lewis [2] says: "In my own series the age limits between which premature contractions have been observed are 4 to 91. During the first decade they are extremely rare." And then in a footnote he adds, "The solitary instance, a child of 4 years included in the table, was especially brought to my notice by Dr. Clive Riviere, who discovered it while examining school children."

Southerland [3] calls attention to the fact that extrasystoles are not so very rare. He says: "It has come to be recognized that extrasystoles may occur at all ages. In the first decade of life, extrasystole, though common enough as an occasional occurrence, is not often present as a definite form of pulse irregularity; in the second they are more frequently met with."

Since clinically this form of cardiac irregularity is very striking, it seemed worth while to observe and record its occurrence in a number of patients and to try to follow these up in order to evaluate the real significance of this cardiac irregularity.

Extrasystole is a premature and abnormal contraction starting at some abnormal site in the heart. The auricles or the ventricles alone may be involved. Extrasystoles are therefore spoken of as auricular, ventricular or nodal, depending on the sites of their origin. The extra beat, coming as it does before the heart muscle has had time to recover completely, is usually smaller and weaker than the regular beats. Moreover, it is followed by a compensatory pause. As a result of this, the irregularity is easily diagnosed by palpation both of the pulse and of the apex beat. In the course of regular heart beats, one suddenly feels a weak, small pulsation followed by an abnormally long pause, after which normal rhythm returns.

Besides this anatomic classification of extrasystoles based on their sites of origin, one may also divide them according to their causes. The following classification will, I think, prove helpful clinically: There are three main types of extrasystole, toxic, nervous and idiopathic. 1. The toxic includes (*a*) infectious toxins due to various acute illnesses, such as rheumatism, tonsillitis and diphtheria, and (*b*) drug toxins, such as digitalis and the salicylates. The toxic variety, as we shall see, usually persists only a short time. 2. The nervous or emotional variety includes the cases in which premature beats follow a great mental shock or emotion. 3. The idiopathic, or those of unknown origin, include cases in which the irregularity starts apparently without any discoverable cause and continues over a period of years. Children may acquire this type of irregularity without having had any acute illness whatever; the irregularity may be looked on as a peculiarity of cardiac rhythm.

In the ensuing discussion, illustrative cases will be presented in the order of the foregoing classification.

Occasional extrasystoles are most commonly due to toxic causes. Foremost among these is the poison of rheumatic fever. It is not at all uncommon to note the occurrence of extra beats during the course of an acute exacerbation in a child suffering from chronic valvular disease. In the cases of this kind which I have seen, the extra beats did not always seem to have special significance, but in some cases appeared to be an evidence of a new infection of the heart muscle itself. The child is not aware of the irregularity. The extrasystole may persist for a few days and then permanently disappear. Quite recently I saw a child suffering from an old valvular lesion, in whom an added pericarditis was accompanied by extrasystoles. In this connection the following case is of interest:

CASE 1.—E. C., a boy, aged 7, previously well except for numerous attacks of cervical adenitis, was taken suddenly ill with high fever and a pharyngitis. Two days later he had developed consolidation of the anterior portion of the lower lobe of the right lung. The pneumonia was complicated by a severe multiple arthritis involving chiefly the joints of the upper extremity and the spine. After a period of about a week the temperature fell to normal, the joint symptoms subsided and the pneumonia gradually disappeared. During this entire period the heart action was rapid, but the heart showed no other abnormality. About six days after the temperature had reached normal, mild choreiform motions of the extremities became manifest and at the same time extrasystoles appeared in the heart. About every tenth beat was extrasystolic. This condition of the heart lasted about a week; the joints remained free and the chorea gradually disappeared. The boy was kept in bed several weeks longer and then appeared perfectly well. At this time an electrocardiogram, taken by Dr. M. A. Rothschild, showed no distinct abnormality. There was a marked sinus arrhythmia present. In the third lead there was a marked respiratory variation in the height of the ventricular complexes. This was simply due to a shift of position of the apex in the various phases of respiration. Clinically, except for an increased irritability, there were no objective evidences of disease. Fluoroscopically, there was some evidence of right heart enlargement.

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* Read before the Pediatric Section of the New York Academy of Medicine, Nov. 12, 1925.

[1] Cowan and Ritchie: Diseases of the Heart, 1922, p. 89.

[2] Lewis, Thomas: Clinical Disorders of the Heart Beat, 1912.

[3] Southerland: The Heart in Early Life.

One year later the patient was in excellent condition and had had no return of any cardiac or rheumatic disability.

On account of the joint manifestations followed by typical chorea, this case must be looked on as one of acute rheumatic infection, and the extrasystoles were in all probability due to an acute inflammatory invasion of the heart muscle.

Coombs[4] discusses this question of the significance of premature beats in the course of rheumatic infection and comes to some fairly definite conclusions. He points out that the irregularity occurs much less often in young subjects than in old, and believes that this is due to the greater frequency of vascular disease in the latter. In rheumatic patients under 16 years of age, less than 1 per cent showed this form of arrhythmia.

Even when premature beats are associated with active rheumatic carditis, the arrhythmia does not furnish any clue to the distribution or severity of the attack. Coombs mentions a girl of 11, with rheumatic carditis, ventricular dilatation and hypertrophy and mitral incompetence, in whom premature auricular contractions persisted almost continually for about eighteen months, "but the bouts of active infection which marked this period had no effect on the arrhythmia, which eventually disappeared without any particular reason for doing so."

Closely related to this condition is the heart irregularity following acute sore throat. A case in point follows:

Case 2.—A. C., a boy, aged 5, who had had a complete tonsillectomy performed at the age of 4 on account of frequent sore throats, was taken suddenly ill with fever and an acute follicular pharyngitis. The lymph follicles in the posterior wall of the pharynx were acutely inflamed, and many of them were tipped with a white exudate. Although the child had been previously protected against diphtheria by toxin-antitoxin injections, a throat culture for diphtheria was taken, which proved negative. A few days after the onset of this illness, cardiac extrasystoles appeared and persisted for several weeks without any other cardiac symptoms. At no time was there a murmur. No medication was given, and under complete rest treatment the irregularity disappeared, and the child completely recovered. This illness occurred several years ago, and the child is still under observation, and at no time have any cardiac symptoms recurred.

During the influenza epidemic, cases were reported in which the beat was seriously affected by this disease. An extreme case of this kind was the following:

Case 3.—R. J., a boy, aged 8, was taken suddenly ill with fever and prostration. That evening he complained of great weakness and cardiac palpitation and suddenly seemed to faint. When seen he was pale, clammy, very weak and prostrated, with an extreme degree of cardiac irregularity. So irregular was the pulse that at first the diagnosis seemed to be a fibrillation. However, in the course of the next few days it became evident that the irregularity was due to many extrasystoles. These disappeared in the course of a few weeks and never returned, the boy making a perfect recovery. Three years later he developed severe laryngeal diphtheria requiring intravenous administration of antitoxin. For several months after this he showed tachycardia; curiously enough, however, though there certainly was myocardial involvement, no extrasystoles were ever observed.

As regards the significance of premature beats in the course of diphtheria, opinions vary. In a series of 120 cases in which examination was made by polygraph, Gunson[5] found premature auricular contractions occurring singly and infrequently in 28 per cent of the children. They constituted the sole irregularity in the mild and moderately severe cases. He found no cases of ventricular extrasystoles in this series.

Marvin,[6] who recently reported a large series of cases of diphtheria carefully studied by means of the electrocardiograph, found extrasystoles to occur only rarely. He says: "Auricular premature beats were detected in only two patients, children aged 5 and 6 years, in whom the diphtheria was mild, and who showed no symptoms of circulatory failure at any time; their recovery was prompt and uneventful. . . . The only abnormalities in the electrocardiograms which seemed to be of significance were disturbances in auriculoventricular or intraventricular conduction."

Smith[7] divides irregularities into the initial tachycardias, which included 72 per cent of the cases studied, and convalescent pulse irregularities including the other 28 per cent. Of the latter, 65 per cent showed sinus arrhythmia, 20 per cent premature contractions and 15 per cent heart block.

He says, "Premature contractions furnished 20 per cent of the irregularities of convalescence, those of auricular origin occurring five times as often as ventricular beats. There is nothing in these studies to indicate that premature contractions herald the approach of graver cardiac involvement." To quote him further: "In diphtheria, auricular premature contractions were found to reverse the usual clinical finding by occurring five times oftener than ventricular premature contractions. One might seek to explain this predominance on the grounds that the acute infection is more likely to cause irritable foci in the lightly constructed auricular musculature, rather than in the thicker, more vascular and, hence, resistant ventricular muscle. Premature contractions of ventricular origin are clinically the more frequent, probably for the reason that they are often associated with structural changes in the heart muscle of the middle aged or elderly persons who are seen in hospitals or private practice. Auricular contractions, on the other hand, are more the manifestation of mildly acute toxic effect on the heart tissue which has not yet undergone actual alteration in structure."

Smith likewise mentions that multiple premature auricular contractions may occur in diphtheria and produce a most disquieting irregularity, but that they may entirely disappear without imposing "a heritage of muscle weakness on the child." I have seen a child in whom extrasystoles persisted for several months after diphtheria and then disappeared, leaving the heart apparently normal. Smith also refers to a child in whom premature contractions acquired during diphtheria did not disappear until five months after the illness.

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[4] Coombs, Carey: Rheumatic Heart Disease, New York, William Wood & Co., 1924.

[5] Gunson: Brit. J. Dis. Child., September, 1914, p. 385.

[6] Marvin, H. M.: Effect of Diphtheria on Cardiovascular System; Heart in Faucial Diphtheria, Am. J. Dis. Child. **29**: 433 (April) 1925.

[7] Smith, S. C.: The Heart in Diphtheria, J. A. M. A. **77**: 765 (Sept. 3) 1921.

Apparently then, though not uncommon, extrasystoles are not of serious import in diphtheria.

The cases described above are all examples of the toxins of various acute illnesses giving rise to extrasystolic contractions. However, other forms of toxins also may cause them. In children, as in adults, excessive use of digitalis may result in their appearance. In one boy who has been under my observation for the last ten years, the taking of acetylsalicylic acid causes extrasystoles to appear, and other forms of salicylates are reported to bring on this irregularity occasionally.

It has been shown experimentally that, though with difficulty, it is possible to produce extrasystoles by stimulation of the cardiac nerves, both sympathetic and vagal. It is therefore of interest that clinically extrasystoles are seen as the result of emotional disturbances such as fear, anxiety, joy or fright.

Case 4, which follows, is probably of this nature.

Case 4.—R., a boy, aged 4 years, who had been under my care for three years, during which time his heart was normal, met with a severe accident, being run over by an automobile. When next I saw him, two months after the injury, he showed extrasystoles every five or six beats. He had had a mild attack of tonsillitis a few weeks previously. The heart irregularity lasted several months and then permanently disappeared. The boy remained high strung and nervous as a result of the accident. Though the intercurrent sore throat could not be absolutely excluded as a cause of the cardiac condition, it was so mild that the emotional shock seemed a much more likely causative factor. This boy has since passed through severe pneumonia and a serious attack of scarlet fever, during neither of which he showed any cardiac disturbance.

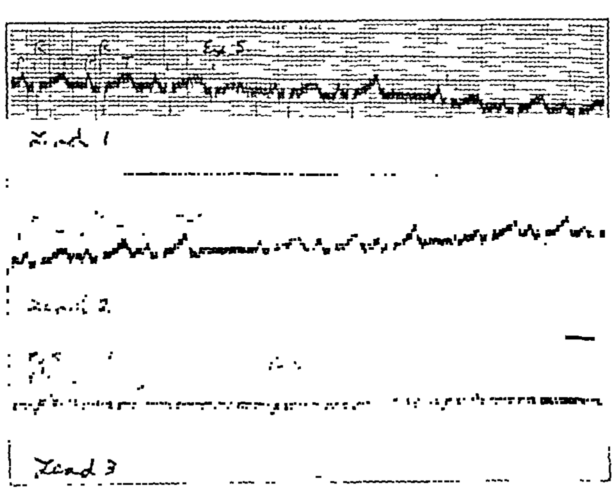

Fig 1 (case 5).—Record of extrasystoles of auricular origin of at least two different types, made in February, 1922.

It will be seen that in all these cases the heart irregularity was transitory. There is, however, another group of cases in which the irregularity seems to be permanent—at least, it remains unchanged for years at a time. These cases are, I believe, unusual enough to be reported in detail.

Case 5.—M. G., a girl, has been under my observation since birth in February, 1919. Her general condition has always been excellent, her weight normal. On account of difficult breathing and loud snoring at night, her very large tonsils and adenoids were removed when she was 2 years old. In January, 1922, when she was 3, extrasystoles were first noted in a routine examination. They occurred about every fifth beat. Physical examination of the heart failed to show any other abnormality; there were no murmurs. The apex beat was felt in the fourth space in the nipple line, and the right border of the heart was percussed at the right sternal border. The urine was normal. As the cardiac irregularity persisted and was present on every subsequent examination, an electrocardiogram was made by Dr. B. S. Oppenheimer, who reported extrasystoles of auricular origin (fig. 1). A teleroentgenogram showed the transverse diameter of the heart to be 8.1 cm.; there appeared to be widening across the region of the great vessels.

Though the extrasystoles have varied in the frequency of their occurrence, they have been constantly present. At one examination an extra beat was noted only once in every twenty-six beats, while at another time an extrasystole appeared at every second or third beat. In May, 1925, the child's height was 44⅝ inches (113.3 cm.), the average for her age being 43⅗ inches (110.7 cm.), and her weight was 42 pounds (19 Kg.), the average for her age being 43½ pounds (19.7 Kg.). The urine continues normal.

Case 6.—R. G., a girl, aged 4½, seen by me at Mount Sinai Hospital Pediatric Dispensary, Nov. 12, 1923, was a first child, breast fed for nine months. In the early part of 1923, she was very ill with measles. In September, she had a very violent gastric attack which required gastric lavage. A week before appearing at the dispensary, she had been seen by a pediatrician who had noted cardiac irregularity and referred her to the clinic. When seen by me her general condition was excellent; her height was 40 inches (101.6 cm.), normal height being 39 inches (98.5 cm.); her weight was 33½ pounds (15 Kg.), normal weight being 36 pounds (16 Kg.). She was bright and alert, and her color was good. The tonsils and adenoids had been completely removed. The liver was felt two fingers below the free border of the ribs; the spleen was not felt. The lungs were normal. The heart and the pulse showed an extrasystolic beat about every four beats. There was no cardiac enlargement, and no murmurs were heard. The urine was normal. Electrocardiographic examination made, Nov. 14, 1923, by Dr. Irving Roth revealed isolated premature beats. The P waves accompanying these extra systolic beats were never premature. The ventricular complexes were always premature, the degree of prematurity, however, varying in these beats. The type of these ventricular complexes was constant; they therefore originated, probably, from a focus high up in the ventricular septum rather than from the bundle of His itself. The T wave of the dominant rhythm was rather tall in lead 1, and inverted in lead 3. The T waves, as well as the Q-R-S complexes of the premature beats, differed from those of the fundamental rhythm (fig. 2).

This child was seen again about eight months later. The arrhythmia persisted unchanged. She had not suffered in any way from the irregularity and was entirely oblivious of its presence.

Case 7.—M. G., a boy, first came under observation at Mount Sinai Pediatric Dispensary in the service of Dr. Rosenson, Dec 6, 1917, at the age of 10 months. At that time no mention was made on the history chart of any cardiac irregularity. His chief complaint was cough. In February, 1920, he again appeared at the clinic and was treated for tonsillitis, there still being no mention of any cardiac abnormality. April 29, 1920, cardiac examination showed a marked irregularity probably due to extrasystoles. An electrocardiogram at that time showed numerous auricular and ventricular extrasystoles. Roentgen-ray examination of the chest showed a moderate enlargement of the bronchial lymph nodes on the right side. In November, 1920, a faint apical systolic murmur was heard. Numerous electrocardiograms were made; one made April 29, 1920, by Dr. B. S. Oppenheimer, showed isolated premature beats, supraventricular in origin, with aberrant ventricular complexes. The auricular beats began at an ectopic site, as was indicated by the inversion of the P waves in leads 2 and 3. The localization of this abnormal site of impulse formation in the auricle is not possible. The more precocious the premature beat, the more aberrant the ventricular complexes (fig. 3).

In January, 1922, the boy was sent to the ward for further study. His general condition was good, and physical examination, except for the heart, was normal. Heart size and position were normal. The rate was normal, but a marked irregularity due to the extrasystoles was present. There was a soft blowing systolic murmur to be heard in the region of the apex not transmitted to the axilla. There was no thrill. The urine was normal. The Pirquet test was positive. Blood count showed 9,800 white cells, with 60 per cent polymorphonuclear cells. The pulse rate varied between 72 and 96. As the boy continually complained of cough, it was thought that there might be some relation between this symptom and the cardiac irregularity Atropine sulphate was administered, beginning with 1 drop of a 1:1,000 solution and increased to 11 drops three times daily. This had no effect on the heart rhythm. Later, this was given hypodermically with the same result.

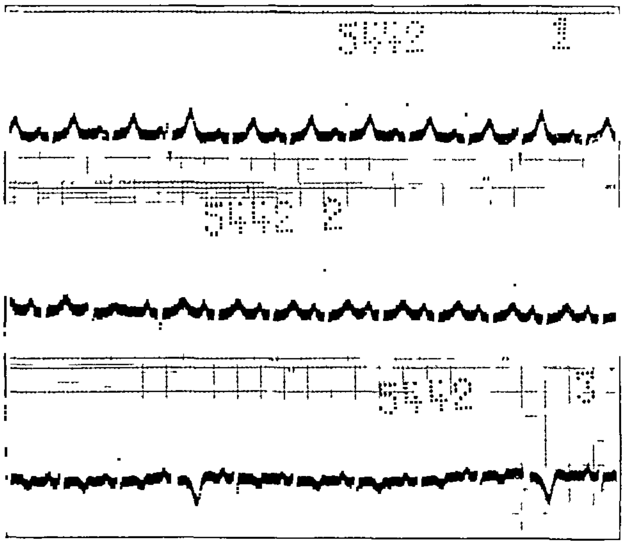

Fig. 2 (case 6).—Record of examination, Nov. 14, 1923.

Dr. Oppenheimer, who examined the child at this time, made this note: "The pulse and heart action are still bigeminal. There is a short blowing systolic murmur and a reduplication or splitting of the second sound of the extrasystoles. As the rhythm has not changed with atropine, I have no further suggestion. Quinidine frequently stops extrasystoles in adults, but since we have had no experience with its therapeutic effect in children, it seems unsafe to suggest it in this condition, which may be classed as one peculiarity in cardiac mechanism, and not necessarily a serious condition from the point of view of prognosis." For the next two years the boy continued coughing and tired easily. The extrasystoles remained the same, and were still present at the last examination in September, 1925.

These three cases apparently represent a different type of extrasystoles from the cases due to acute toxins referred to earlier in this paper. In the last case of the three, the continued presence of cough and the transitory systolic murmur might possibly suggest some doubt as to the harmless type of the irregularity. However, the first and second cases show that frequent extrasystoles may be constantly present over a very long period of the child's life without apparently causing any grave injury.

Seham[8] mentions two apparently normal children in whom extrasystoles were present, and reproduces the electrocardiogram of a boy, aged 10 years, showing left ventricular extrasystoles with compensatory pause, the diagnosis being functional arrhythmia, no heart disease.

As far as treatment is concerned, it has seemed best to refrain from any exhibition of drugs. When the premature beats are an accompaniment of an acute disease such as rheumatism or diphtheria, the appropriate treatment of the causative illness is to be carried out and the child is to be kept at rest for a prolonged period. In the idiopathic cases, no treatment is necessary. Drugs have not been found of any use in our cases.

Quite recently the effect of drugs on adults with persistent premature beats has been very carefully studied by Otto.[9] He showed that quinine or quinidine and digitalis both might diminish the number of extrasystoles and in some cases cause their disappearance. However, the drug effect was only temporary, for the irregularity reappeared in spite of the continued use of medication.

From the cases cited, we may, I think, conclude that extrasystoles are not of particularly serious import when they occur during childhood. They are often an evidence of acute involvement of the heart muscle, as we have seen, though apparently their presence does not necessarily indicate grave involvement. Mackenzie[10] says: "Where I have not been able to see my way clearly is in regard to the meaning of extrasystoles in acute affections; thus, during an attack of rheumatic fever or shortly after the subsidence of the fever, extrasystoles may appear. Whether they indicate that the disease has invaded the muscle I do not know, as I have not been able to follow up a sufficient number of cases to comprehend their relations clearly. In a few cases their presence was coincidental with the affection of the heart." I believe that we may say, from the study of the literature and from our own observations, that premature beats of toxic origin, including those occurring in the course of rheumatic

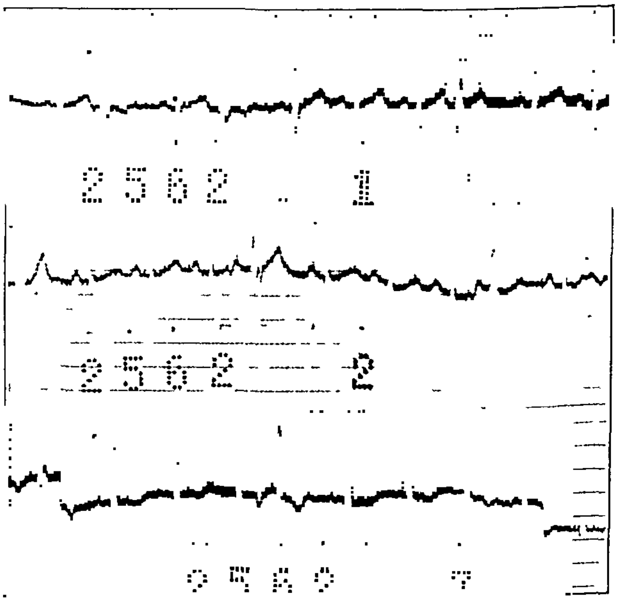

Fig. 3 (case 7).—Record of examination, April 29, 1920.

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[8] Seham: Electrocardiography in Children, in Abt's Pediatrics.

[9] Otto: Report read before the Medical Section of the New York Academy of Medicine, Oct. 20, 1925.

[10] Mackenzie: The Principles of Diagnosis and Treatment in Heart Affection, p. 111.

fever, are not necessarily a symptom of permanent injury. What the ultimate fate of such cases may be, only time and continued careful observation will tell.

SUMMARY AND CONCLUSIONS

Three varieties of extrasystoles occur in childhood—emotional, toxic and idiopathic. Of these the toxic and the idiopathic are the most important. The toxic variety occurs in the course of, or as the result of, acute infections. It is usually transitory and, although coincident with acute cardiac inflammation, is not necessarily an evidence of severe permanent cardiac injury. In most cases the irregularity completely disappears and does not seem to leave the child predisposed to attacks of recurrence. The second main variety, the idiopathic, is seen in the healthy child when, without apparent cause, the heart rhythm is suddenly changed by the frequent interpolation of premature beats. This condition is more or less permanent and does not seem to predispose to, or to result in, cardiac weakness. Even children who show extrasystolic contractions every few beats over a period of years need not present any other subjective or objective symptoms of cardiac disease.

57 West Ninety-First Street

LUMBAR PUNCTURE AND THE PREVENTION OF POSTPUNCTURE HEADACHE [*]

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As the result of experiments made during 1923 and my experience since that time with the use of a small needle [1] having a round, sharp, tapering point, I am convinced that postpuncture headache is caused by trauma to the spinal dura sufficient to result in excessive leakage of cerebrospinal fluid to the point at which the brain is left without a water cushion.

These experiments demonstrated that a greater trauma was produced by the use of a needle with a blunt cutting point than by a needle of the same caliber with a point rounded, tapering and sharp. It was also shown that leakage followed puncture of the spinal dura in every instance in which the membrane was suspended and filled with water, and that the amount of leakage was in direct relation to the size of the needle used (Fig. 1).

The problem is, then, to do the puncture by ways and means that produce the least possible trauma to the spinal dural sac.

The details and methods employed in this operation are as follows:

1. The patient should be placed on a table in a comfortable position and should remain motionless while the needle is in the dural sac.
2. A local anesthetic should be used in both the skin and the deeper tissues.
3. A needle with a point that is round, tapering and sharp should be used. The needle should be sharpened so as to resemble an ordinary cambric needle and should be polished each time before it is used. Gage 22 is the most suitable, but a needle one or two sizes larger may be used with good results.
4. After the fluid appears in the hub of the needle it is advisable to aspirate the sample, using the precautions mentioned in my original article on lumbar puncture.[2]

Two hundred and fifteen consecutive punctures have been done, with a headache incidence of two in the series. The punctures were nearly all done in the office, and the patient was allowed to go home and lie down. In many instances the puncture was done during the noon hour, and the patient resumed his work for the remainder of the day, taking no precaution to prevent headache.

The spinal dura mater consists of white fibrous and elastic tissue arranged in bands or lamellae, which, for the most part, are parallel with one another and have a longitudinal arrangement Each surface is covered by a layer of endothelial cells.[3]

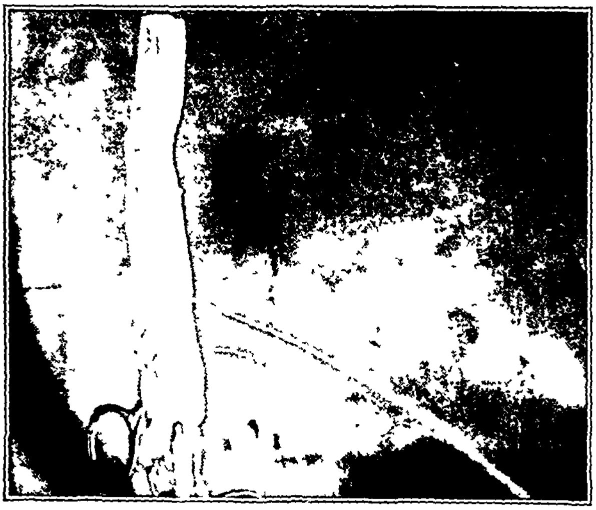

Fig. 1—Spinal dural sac suspended and filled with water. A large stream results from a puncture with a Gage 19 needle with a cutting point; a small stream from a Gage 22 needle with a round point.

It will be observed there are no circular fibers in the spinal dural sac; therefore it is possible to pass a small sharp, round, tapering pointed instrument between the fibers composing the sac without cutting any of them. The wound resulting from the use of such an instrument is a longitudinal slit little influenced by movements of the body or of the head. The fact that both surfaces of the spinal dural sac are covered with endothelial cells would indicate that there is movement of the sac in the spinal canal as well as movement of the spinal cord in the sac. The anatomist states that the dural sac hangs loosely and is not closely adherent to the bones of the spinal canal except in the cervical region.

On dissection, I observed that the attachment of the sac is firmer anteriorly than it is posteriorly, and that the attachment is so loosely made posteriorly that movement of the sac may be observed in the lumbar region when the head is moved while the cervical and dorsal vertebrae are intact.

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[*] Read before the Spokane County Medical Society, Spokane, Wash, Oct. 8, 1925.

[1] Credit is due the firm of Becton, Dickinson & Co., Rutherford, N. J., for experimental work carried on by them in perfecting a needle of small caliber suitable for lumbar puncture

[2] Greene, H. M.: A Technic to Reduce the Incidence of Headache Following Lumbar Puncture in Ambulatory Patients, with a Plea for More Frequent Examination of Cerebrospinal Fluids, Northwest Med. 22:240 (July) 1923

[3] Gray's Anatomy by DaCosta, New American edition, 1907, p. 834

When the head and neck are pulled forward, the posterior portion of the spinal dural sac in the lumbar region is pulled upward, and extension of the head and neck allows the sac to move down again. If, during puncture, a large rigid needle is used, the seesawing of the dural sac over this needle by movements of the spinal column, or even the movement of the head, will result in excessive trauma to this membrane, and much time will be required to close the membrane to its original water-tight condition.

A small needle, for this reason, is preferable, and is a much safer instrument to use because it will bend before it will break. The large needle shown in Figure 2 is gage 19, and is made of the best material. It was bent, and it broke at the angle shown. The small needle shown in Figure 2 was grasped by forceps, bent to a 90 degree angle, and then wound around the forceps like a coil spring without breaking.

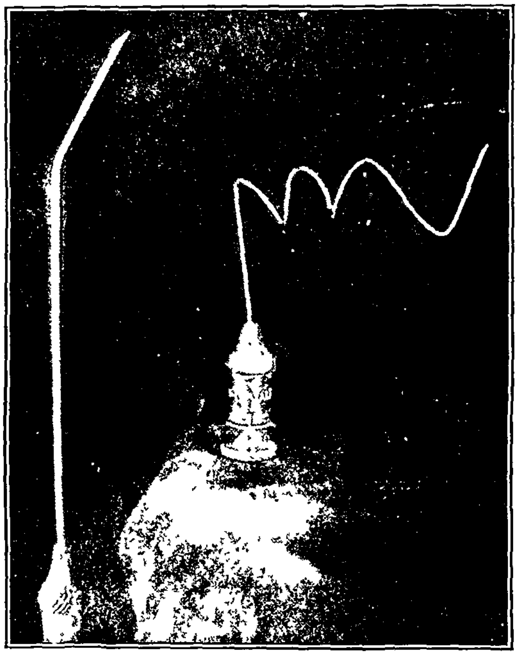

Fig. 2.—A large needle was bent with the fingers to the angle shown; it broke. A small needle was bent to a 90 degree angle and then coiled around forceps without breaking.

CONCLUSIONS

1. Lumbar puncture will not be followed by post-puncture headache unless the dural sac is injured to a degree that will permit excessive leakage of cerebrospinal fluid.
2. It is essential for the best results to keep the patient quiet and in a fixed position while the needle is in the dural sac.
3. A small needle produces less trauma and is a safer instrument to use than a large one.

1206 Stevens Building.

Climacteric Arthritis.—The arthritis commonly met with in women at the menopause is closely allied to the chronic villous arthritis in which the swelling of the joint is chiefly due to an overgrowth of synovial membrane. This arthritis is often associated with infective foci, but the general metabolic change in the body is more obvious and important than these. In the common type mostly affecting the knees of middle-aged women there are signs of definite thyroid deficiency, and thyroid extract should always be tried.—Gordon, R. G., Physiotherapy in the Treatment of Arthritis, *Brit. M. J.*, Jan. 9, 1926.

THE PES CAVUS OF CONGENITAL SYPHILIS [*]

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In the course of a systematic study of congenital syphilis in the Kings County Hospital and the Long Island College Dispensary, Brooklyn, interesting features were brought to light, which do not break entirely new ground but aid in establishing certain hitherto obscure clinical findings as stigmas of congenital syphilis.

Fournier, in 1875, first stated that syphilis was the cause of tabes dorsalis, and Erb later confirmed Fournier's work. While these two well known pioneers in neurosyphilography developed the specific side of tabes, Hutchinson, in 1896, brought out certain now generally acknowledged clinical findings as stigmas of congenital or hereditary syphilis, the Hutchinson triad, consisting of interstitial keratitis, notched incisors and eighth nerve deafness.

Since these early times, a great mass of work has been carried out in the field of clinical and pathologic syphilis, which has brought about a clearer understanding of the disease. But, as yet, certain cases of obscure congenital syphilis or syphilis hereditaria tarda, which every clinician meets occasionally, remain baffling and most difficult to diagnose. The earlier cases with positive clinical evidence, occurring in very young children, have been well worked out by many investigators, and a number of clinical findings have been definitely established as congenital stigmas. Among those recently reported is the dystrophia that Graves describes and calls the scaphoid scapula. Myopathic changes, bony changes and dental dystrophia of congenital syphilis have been described by a host of observers, chief among whom are Donnelly,[1] Hazen,[2] Roberts[3] and Wall[4] of the United States, Sabouraud,[5] Gaucher, Guilly[6] and Moses[6] of France, and Cavalaro,[7] an Italian observer, each describing some disturbance or dystrophia found in congenital syphilis.

H. H. Hazen, in a remarkably inclusive report in several articles, describes further pathologic findings in congenital syphilis involving practically every region and structure in the body. Dembo, Litchfield and Foote[8] state that the most frequent bone diseases found in congenital syphilis are epiphysitis, osteitis, painless hydrops articuli, periostitis, dactylitis, and changes in the skull with localized thickening of the bone and sometimes softening, giving rise to cranial tabes and prominent bosses. Fridley[9] states that these bone changes may be present at birth. Nichols and Ely[10] show that dactylitis in congenital syphilis, whether of the early or of the late type, is essentially a gummatous affair, with softening of the bone. Theones[11] states that the roentgen ray is of great value in the diagnosis of bone changes in congenital syphilis. Jeanselme[12] assumes that the muscular system can be influenced like other organs in the body. Many others have contributed information on the bone, joint and muscular changes in congenital syphilis. And yet, the literature is surprisingly free from material describing bone, joint or muscle changes pertaining to the feet in congenital syphilis.

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[*] From the neurologic service of Dr. William Browning, chief of service, Kings County Hospital, Brooklyn.

[*] Many cases were taken from the congenital syphilis clinic of Dr. Given of the Long Island College Hospital, Polyhomus Memorial Clinic, Brooklyn.

[1] Donnelly, W. H.: Dental Stigmata in Diagnosis of Obscure Congenital Syphilis, Long Island M. J. **14**, 1920.

[2] Hazen, H. H.: Practical Observations on Syphilis, III, Am. J. Syph. **6**, July, 1922.

[3] Roberts, P. W.: Diagnostic Teeth, New York M. J. **106**: 256 (Aug. 11) 1917.

[4] Wall, J. H.: Arch. Pediat., October, 1919.

[5] Sabouraud, R.: Sur un signe dentaire de l'hérédo-syphilis, Presse méd. **25**: 169 (March 22) 1917.

[6] In Hazen, H. H.: *Monograph on Syphilis.*

[7] Cavalaro, Joseph: Syphilis in Relation to Dentition, Dental Cosmos, November, 1908-1909.

[8] Dembo, L. H.; Litchfield, H. R., and Foote, J. A.: Bone and Joint Changes in Congenital Syphilis, J. A. M. A. **78**: 319 (Feb. 4) 1922.

[9] Fridley, Leonard: Syphilis in Childhood, Oxford Medical Publications, 1919.

[10] Nichols and Ely: Diseases and Deformities of the Hands and Fingers, Reference Handbook of the Medical Sciences **4**, 1914.

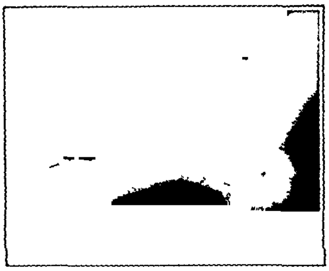

Fig. 1 (Case 2).—The foot is hollow, the toes considerably drawn up, although completely relaxed, and the arch well described.

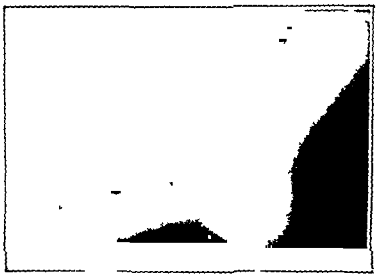

Fig 2 (Case 5) —The toes are not drawn up quite as much as in Figure 1, but the characteristics are easily observed.

The present report concerns certain observations made in a series of cases of congenital syphilis with particular reference to the feet, showing in practically every case, regardless of any other factor, the occurrence of a pes cavus of congenital syphilis, in which the ball of the foot is prominent, the toes are slightly flexed on the foot, the big toe more than the other toes, producing a pseudohammer toe and a typical hollow foot.

The cases observed belonged chiefly to the dispensary class, in which laboratory work and clinical study were conducted with great thoroughness. Recognized methods of diagnosis were used, and in each case a positive diagnosis of congenital syphilis was determined. The accompanying table shows the type and variety of findings used to establish a diagnosis.

In each case a positive Wassermann reaction was taken as the most definite indicator of syphilitic infection, and supplemental evidence of a positive family history was considered next in importance. Other recognized findings were looked for and used to establish a positive diagnosis.

The type of hollow foot or pes cavus found to occur in the cases of congenital syphilis observed varied somewhat in extent. In six cases of the thirty-three reported, only moderate deformity was found. This is accountable in part by the fact that these patients had all been under prolonged and persistent antisyphilitic treatment, with partial diminution in the deformity. This brings up the question of pathogenesis. Practically every case showed abnormal muscle tautness, which was independent of the presence or absence of reflexes. This finding was determined by flexing the thigh on the trunk, while the patient was in a reclining position, and extending the leg until the posterior group of muscles became taut; or bending forward, while standing with the feet together, and trying to touch the floor with the finger tips without bending the knees. A limited range of motion was observed in every case. Many of the cases showed unequal tautness of the spinal groups of muscles on the two sides, producing a very slight scoliosis, an elevation of one scapula, or a tilting of the pelvis. This unequal muscular tension was present in the muscle groups of the legs, feet and other parts of the body. Is the pes cavus, therefore, produced by an unequal tautness of the flexor and extensor groups of the tarsals and metatarsals? The hollow foot persists after death to a moderate extent. It was present in a 7½ months old fetus that was born dead; in this case the placental blood gave a positive Wassermann reaction.

Roentgenograms of many of the cases were made, and no bony changes were observed other than a presumably secondary subluxation of the basal phalanges, sufficient to produce a prominent ball of the foot. No abnormal muscle or joint conditions could be found other than the slight increase in the muscular tension of the extensor and flexor groups of the feet and legs. It was thought that perhaps the deformity of the foot might have been brought about by some nutritional disturbance similar in nature to those occurring at the other pole of the body; namely, the teeth and the cranial bones. However, nothing was found to confirm or even to point to this.

REPORT OF CASES

Case 1.—J. G., a boy, aged 12 years, gave a 4 plus Wassermann reaction. There was a positive family history of syphilis on the father's side. The boy was sent to the hospital for paresis of the left arm and the left side of the face. There was no history or finding of anterior poliomyelitis. The spinal fluid was positive for syphilis only. The boy had Argyll Robertson pupils, very active reflexes, a saddle nose, rhagades, and a dull mentality. The parietal bosses were prominent; one upper molar showed three cusps and one five cusps. The patient was unable to bend and touch the floor with the fingers; the muscles of the legs and thighs were more than normally taut, and both feet showed a typical pes cavus as described before.

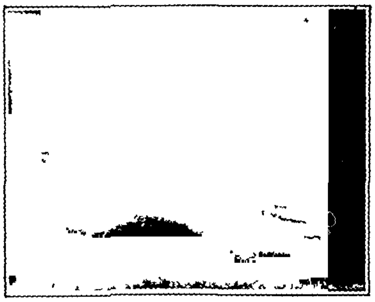

Fig 3 (Case 10) —Again the foot is quite noticeably concave, while the toes are less pronounced.

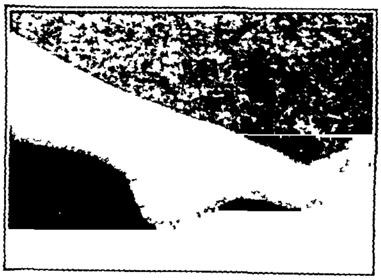

Fig 4 (Case 24) —Although the foot is completely relaxed, the result here is almost that of a claw foot with the characteristic concavity present.

Case 2.—E. B., a girl, aged 13 years, gave a 4 plus Wassermann reaction. The family history could not be obtained. She was sent to the hospital for convulsions and an abnormal mental condition, where a diagnosis of juvenile paresis was made. The child had Hutchinson's teeth, with a profuse coryza; irregular, unequal pupils, which reacted sluggishly to light; prominent parietal bosses; aortic stenosis, and carious teeth with the two upper molars showing five cusps. The reactions in general were very sluggish; the liver was enlarged, and the spleen palpable. Both feet showed a typical pes cavus.

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[11] Theones: Arch f. Kinderh, Jan 28, 1922

[12] Jeanselme, E: Progressive Myopathies Due to Hereditary Syphilis, Médecine 4:96 (Nov.) 1922; abstr, J. A. M. A. 80:435 (Feb 10) 1923.

Case 4.—E. M., a youth, aged 20, gave a 4 plus Wassermann reaction. The family history was positive for syphilis. The patient came to the hospital for antisyphilitic treatment, knowing his condition; he was symptomless. He had Argyll-Robertson pupils, a saddle nose, a high palate, rhagades, a good mentality, Hutchinson's teeth, with one mulberry molar and one upper molar with three cusps, and his other teeth were carious. Reflexes were absent, but muscle tautness was present, though it was not marked. A typical pes cavus was present.

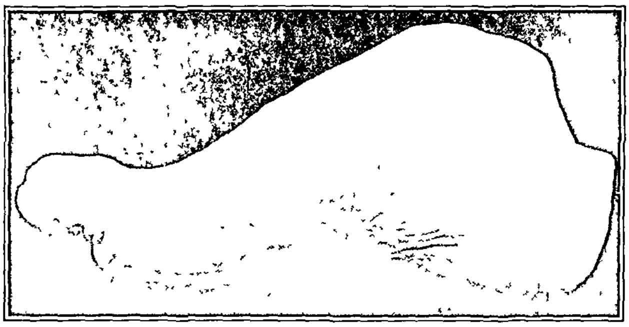

Fig. 5.—Model of the pes cavus of congenital syphilis in plaster showing the usual hollow foot, pronounced arching and pseudohammer toes.

Case 13.—Mrs. A. K., aged 33, gave a 4 plus Wassermann reaction. The family history was positive for syphilis; the father having contracted syphilis when 18 years of age. Reflexes were absent. The patient had rhagades, poor mentality, moderate muscle tautness, and carious teeth, one mulberry molar being just visible and not as yet worn smooth, and three molars having five cusps and one molar having three. There was slight beginning alopecia, and a typical pes cavus was present. The patient is the mother of the following two patients.

Case 14.—R. K., a boy, aged 4 years, gave a 2 plus Wassermann reaction. He is the second child of Patient 13 and represents the second generation showing congenital stigmas. He has interstitial keratitis, carious teeth, rhagades, sluggish reflexes, a good mentality, an enlarged liver and spleen, moderately increased muscle tautness, prominent frontal and parietal bosses, and a typical pes cavus, although not as marked as usual.

Case 15.—L. K., a girl, aged 10 years, gave a 4 plus Wassermann reaction. She is the first child of Patient 13. She has been under antisyphilitic treatment for seven years. She showed rhagades, poor mentality, carious teeth, with one mulberry molar and one molar showing three cusps, a square shaped cranium, normal reflexes, practically normal muscular tautness, and a pes cavus of only a moderate degree.

COMMENT

The foregoing briefly stated case histories are examples of my observations, and they show, in practically every case, a pes cavus as one of the common stigmas.

Seventy-four children, not syphilitic, were examined and taken as controls after the possibility of a syphilitic infection had been definitely ruled out. Of this number, twenty-eight had flat feet, thirty-eight had normal feet and normal arching, and eight had a slightly exaggerated arching of the foot not associated with flexion of the toes, as in the cases observed of congenital syphilis. These children varied in age from 1 to 13 years.

Nineteen infants, with negative Wassermann reactions, and an absence of all other recognizable stigmas of congenital syphilis, were found to have either flat or normally arched feet, with the exception of one who had a foot suggestive of pes cavus. This one exception was a seven months' premature infant that later developed intestinal disturbances and died. There was no necropsy.

Twenty-five women were examined. Some stated that they wore high heeled shoes all the time and some

Conditions Found in the Cases Studied and the Methods Used in Diagnosis

Case	Age	Sex*	Wassermann Reaction†	Family History	Interstitial Keratitis	Argyll-Robertson Pupil	Rhagades	Low Mentality	Idiocy	Paresis	Deafness	Hutchinsonian Teeth	Mulberry Molar	Tricuspid Molars	Quinticuspid Molars	Carious Teeth	Cranial Deformity	Increased Knee Reflexes	Muscular Tautness	Enlarged Liver and Spleen	Alopecia	Pes Cavus
1	12	♂	4+	+	..	+	+	+	..	..	..	..	..	+	+	..	+	+	+	..	..	+
2	13	♀	4+	..	..	..	..	+	..	+	..	+	+	..	+	+	+	+	+	+	..	+
3	15	♂	—	..	..	+	..	+	..	..	+	..	..	+	..	+	+	..	+	..	..	+
4	20	♂	4+	+	..	+	+	..	..	..	..	+	+	+	..	+	+	..	+	..	..	+
5	7	♂	4+	..	+	+	..	..	..	..	..	..	+	+	..	+	..	+	+	..	..	+
6	12	♀	D	+	+	..	..	..	..	..	..	+	+	+	+	+	..	+	+	..	..	+
7	11	♂	4+	..	+	..	..	..	..	..	..	+	..	..	..	+	+	+	+	..	..	+
8	7	♀	D	..	+	+	..	..	..	..	+	+	+	..	..	+	..	+	..	..	..	+
9	28	♂	0	+	..	..	..	+	..	..	..	..	+	+	..	..	+	..	+	+	+	+
10	11	♀	4+	+	+	..	..	..	..	..	..	+	..	..	..	+	..	+	+	..	..	+
11	2	♂	3+	+	..	..	..	..	+	..	..	..	..	..	..	+	..	+	..	..	..	+
12	4	♀	3+	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+
13	33	♀	4+	+	..	+	+	+	..	..	..	..	+	+	+	+	+	..	+	..	+	+
14	4	♂	2+	+	+	..	+	..	..	..	..	..	..	..	..	+	+	+	+	+	..	+
15	10	♀	4+	+	..	..	+	+	..	..	..	..	+	+	..	+	+	+	+	..	..	+
16	6	♂	4+	+	..	+	..	..	..	+	..	+	+	+	..	+	..	..	+	..	..	+
17	5	♀	+	+	..	..	..	..	..	..	..	..	..	..	+	..	..	+	+	..	..	+
18	7	♀	+	+	..	..	..	..	..	..	..	..	..	..	+	..	..	+	+	..	..	+
19	5	♂	4+	+	..	+	..	+	..	..	..	..	..	..	..	+	..	..	+	..	..	+
20	10	♀	4+	+	..	..	..	..	..	..	..	..	+	..	+	..	..	+	+	..	..	+
21	6	♂	4+	+	..	..	..	..	..	..	..	..	+	..	+	..	..	+	+	..	..	+
22	14	♂	4+	+	..	+	..	+	..	..	..	..	..	..	..	+	..	+	+	..	..	+
23	11	♂	3+	+	..	..	..	+	..	..	..	..	..	..	+	..	..	+	+	..	..	+
24	14	♀	4+	+	+	+	..	..	+	..	..	..	..	..	+	+	+	..	..	..	..	+
25	7	♀	4+	+	..	..	..	..	..	..	..	..	..	+	..	+	..	+	+	..	..	+
26	9	♀	4+	+	..	..	..	..	..	..	..	..	..	..	..	+	..	+	+	+	..	+
27	6	♀	3+	+	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	+
28	9	♂	4+	+	..	..	..	..	..	..	..	..	+	..	..	+	..	+	+	..	..	+
29	10	♂	2+	+	+	..	..	..	..	..	..	..	..	..	+	..	..	+	..	..	..	+
30	12	♀	4+	+	+	..	..	..	..	..	..	..	+	..	+	..	..	+	+	..	..	+
31	39	♂	—	+	..	..	+	+	..	..	..	..	..	..	+	+	..	..	..	..	..	+
32	43	♂	—	+	..	+	..	..	..	..	..	..	..	..	..	+	..	..	+	..	..	+
33	¾‡	♀	+	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+

* In this column, ♂ indicates male; ♀, female.
† D, doubtful; 0, not obtained.
‡ Seven months premature.

only occasionally, while three said they had not worn them at any time. They showed either flat or moderately arched feet; none had the hollow foot found in congenital syphilis. These women all had negative Wassermann reactions and gave negative family histories for syphilis. They were void of any stigmas of congenital syphilis.

Fig. 6—A case of talipes following acute poliomyelitis, which has something in common with the pes cavus of congenital syphilis and suggests a probable similarity in pathogenesis.

Walter Truslow[13] describes a talipes equinovarus following acute anterior poliomyelitis. Two cases that I observed showed a similar condition, but the deformity was not so marked. One case following acute poliomyelitis gave a pes cavus in many ways similar to that of congenital syphilis, only much more marked and bordering on a true talipes. This gives a clue to the possible pathogenesis of the hollow foot of congenital syphilis.

SUMMARY

The cases observed, in which a positive diagnosis of congenital syphilis was made, showed many characteristic stigmas.

A pes cavus, generally bilateral, occurred in practically every case of congenital syphilis and did not occur in the control cases that were free from syphilis.

This pes cavus with its characteristic pseudohammer toes constituted a new, hitherto undescribed stigma of congenital syphilis, and apparently is dependent on a neuromuscular condition for its pathogenesis.[14] This is denoted further by a very slight scoliosis, tilting of the pelvis, muscular tautness of the hamstrings and variability of the reflexes.

Posture and wearing of high heels have no influence in the production of the pes cavus of congenital syphilis. This type of pes cavus is not progressive and rarely gives rise to symptoms. Antisyphilitic treatment seems to diminish this deformity.

The pes cavus of congenital syphilis persists throughout life and, when discovered, is a valuable aid in diagnosing obscure cases of congenital syphilis.

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[13] In a paper read before the Brooklyn Pediatric Society, Nov. 23, 1921.

[14] The neuromuscular phase in the pathogenesis was first called to the author's attention by Dr. Rushmore, professor of orthopedics, Long Island College, Brooklyn

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Elimination Through the Lungs.—Absorption from the lungs is not only more rapid than from the stomach, but more rapid than from subcutaneous injection, and practically more rapid even than from intravenous infusion. As regards the elimination of any substance, the lungs are incomparably the most rapid channel. A substance which, even with the aid of diuresis, will be excreted through the kidneys only in the course of days, may be excreted through the lungs within a few hours. The lungs should, therefore, be used for the therapeutic elimination of all harmful substances that are volatile.—Henderson, Yandell: *Brit. M. J.*, Jan. 9, 1926.

FAMILIAL FINGER CONTRACTURE AND ASSOCIATED FAMILIAL KNEE-JOINT SUBLUXATION

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Congenital finger contracture occurs both as an isolated condition and as a familial one, although the latter is less frequent. In recent years, at least, no family group has been described, that presents this abnormality. Most of our knowledge on the subject of the familial type is based on observations on single or few members of one family. In the group described here, contracture has been frequent. A large number of those having the defect have been examined, and data concerning most of the remaining ones have been secured.

The cause of congenital finger contracture has never been determined. The pathologic change underlying the contracture has long been a subject of dispute. The deformity has been attributed to flexor spasm, extensor paralysis, shortening of the volar skin, paralysis of the lumbrical and interossei muscles, shortening of the digital and palmar fascias, and shortening of the joint capsules. Neuhoff,[1] in the most recent contribution to the subject, believes that the last is the real cause, and is confirmed in his opinion by his operative findings.

Adams[2] states that the condition is usually not noticed until a month or so after birth. He believes that the *deformity is most frequent in females but did not report* any complete family studies on the frequency of the condition and its hereditary aspect. He found the condition to be progressive and divided it into three stages; he has been quoted on this point by subsequent authors.

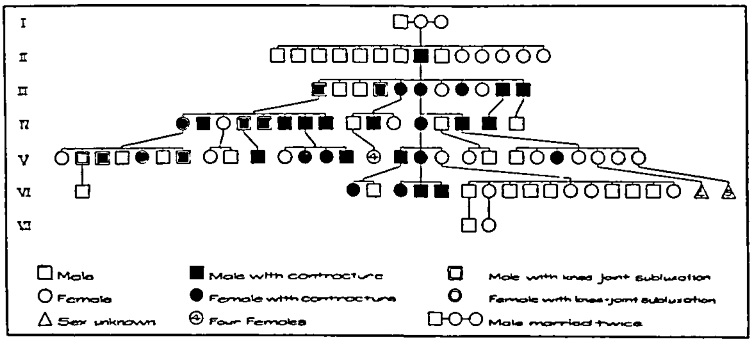

Fig 1.—Pedigree of family presenting congenital finger contracture and associated subluxation of the knee joint

Schultze,[3] in a comprehensive review, recorded many associated hand deformities. These included hyperdactylia, hypodactylia, klinodactylia and ankylosis of various joints. He also mentioned hammer-toe as an associated condition. Adams noted a general nervous weakness in these individuals.

The family reported in this paper live in an isolated rural community in western North Carolina. They are simple uneducated people of good habits and do not seem to have inbred closely. About one third of the family have finger contracture. It is more frequent in the males (41 per cent.) than in the females (28 per cent.), is transmitted by either sex and is equally severe in the two. It is always noticed at birth, and the deformity does not increase with age. The deformity is passed from generation to generation without losing any of its characteristics or any of its severity. In fact, the most marked contracture was observed in the youngest individual examined. The severity of deformity in the parent does not have any direct bearing on the degree of defect as seen in the offspring.

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[1] Neuhoff, H., and Oppenheimer, E. D: Congenital Contractures of the Fingers, with the Report of a Case of the Familial Type, Surg, Gynec. & Obst **19**: 193 198, 1914

[2] Adams, W.: On Finger Contracture and Hammer-Toe, Ed. 2, London, J. and A. Churchill, 1892

[3] Schultze, E: Angeborne familiäre Kontraktur der Gelenke des kleinen Fingers, Centralbl. f. d. Grenzgeb. d. Med u. Chir. **16**: 608-621, 1913.

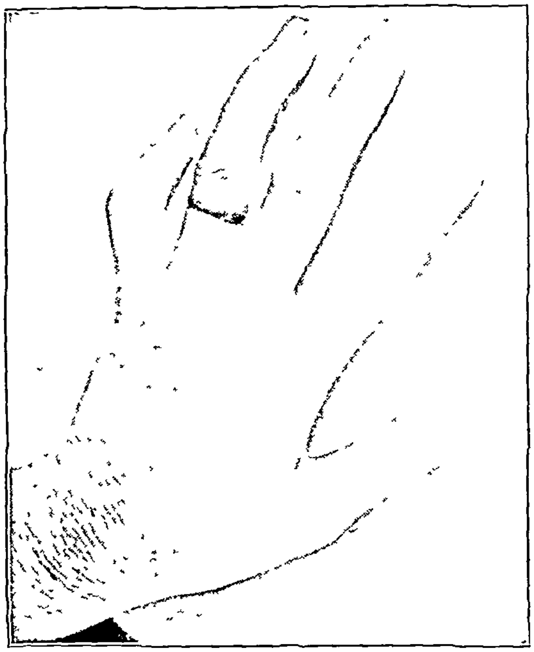

Fig. 2.—Left hand of Subject V 17, showing exaggerated flexion of little and ring fingers, with the characteristic outward rotation of the little finger. The remaining fingers and thumb exhibit the same tendency. The thumb is spread as far as is possible and is straight, resembling somewhat the fingers.

For purposes of study, the hands in this family may be divided into three groups:

1. Normal hands.
2. Mildly contracted hands.
3. Hands having mild contracture as a basis, with an exaggerated flexion of one or more fingers.

The hands of the first group are perfectly normal in every respect and give no indication of the fact that other members of the same family are subjects of deformity.

The mildly affected hands, which do not seem to have been described before, present a uniform appearance. The condition is always bilateral, and all of the digits on each hand have the same characteristics. Every joint of each digit has a slight contracture, and each one has about the same amount of deformity. This mild contracture gives the hands a somewhat "cupped" appearance. The thumbs, on account of this mild flexion, appear to be straight. They present no dorsal concavity and are strikingly similar to the fingers in their contour. It is impossible, either actively or passively, to straighten the thumbs or fingers or to hyperextend them. This test easily differentiates the normal from the abnormal hand. No associated abnormalities were observed in any of these hands or in any of the other hands in the family.

Those individuals having acute flexion of one or more fingers had a mild flexion of the remaining digits also. The little finger was most often affected, while the ring finger was a close second in this respect, the condition being almost always bilateral. Bilateral uniformity was not noticed so often, however, in the case of severe contracture of the other fingers. The middle and index fingers were more rarely affected, but the contracture in them was usually more severe. The frequency of deformity decreased as the thumb was approached, while the severity of the condition became more marked. The thumb was never the seat of more than a very mild deformity.

Contracture was always most marked at the first interphalangeal joint. The skin at the joint was always smooth and shortened but did not appear to be the chief cause of limitation of the power of extension. When contracture was marked, the fingers tended to rotate on their long axes. The little and ring fingers turned so that their palmar aspects faced toward the other fingers, while the reverse turn was given, in severe instances, to the index and middle fingers.

The most commonly associated skeletal disturbance to be noted was subluxation of the knee joint. This occurred in eleven members of the family distributed through three generations. It affected either knee, was noticed usually about puberty, and in most instances was easily reduced, after which the patient continued his work without further discomfort. This frequent joint disturbance suggests that the finger contracture is only one indication of a general bodily joint disturbance and lends weight to the observations of Neuhoff that the chief underlying cause of the finger contracture is disturbance of the joint capsule.

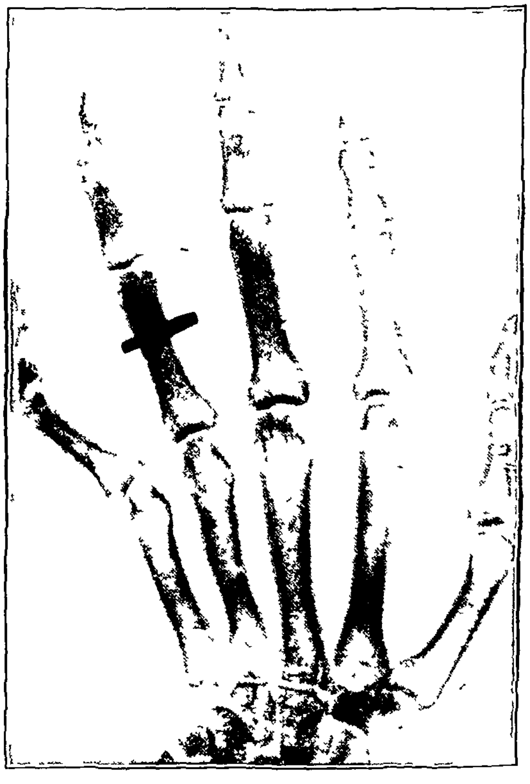

Fig. 3.—The hand of V 17, showing normal bones and joint surfaces.

Other stigmas observed in this family include what is called "dropped shoulder," observed in two members, and limitation of motion of the cervical vertebrae in a woman who suffered from frequent attacks of severe pain in the sacro-iliac region. Two children in one family presented overlapping of the second and third toes on each foot. Another father and son each presented a severe speech defect, while the youngest member, possessing the most aggravated form of finger contracture, had very deformed clubfeet.

*Distribution of Mild and Acute Finger Contracture**

Identification	Uniform Mild Contracture	Exaggerated Flexion of Digits				
		Thumb	Index	Middle	Ring	Little
II 8					×	×
III 1	×					
III 4						×
III 5, 6				×	×	
III 8					×	×
III 10 11				No record		
IV 1, 2					×	×
IV 4, 5, 6, 7	×					
IV 8				No record		
IV 10					×	×
IV 12, 14, 15	×					
V 3				No record		
V 5, 7	×					
V 10				×	×	
V 12	×					
V 13						×
V 14				No record		
V 16, 17						×
V 23	×					
VI 2						×
VI 4				×	×	×
VI 5				×	×	
VI 6			×			×
Totals	12	0	1	5	10	12

* All persons with exaggerated contracture also exhibited mild contracture of the remaining digits This is not recorded in the chart The extreme flexion is recorded as it occurred in either hand, the crosses recording the totals for the combined hands in each subject

CONCLUSIONS

1. There is no evidence to indicate the cause of the finger contracture, although it appears to be a part of a degenerative physical tendency, affecting especially the joints.
2. Shortening of the joint capsules appears to be the underlying cause of the deformity.
3. The finger contracture is always present at birth and does not become more aggravated with age.
4. Males are more frequently affected than females.
5. Exaggerated flexion affects most frequently those fingers on the ulnar side of the hand, while the severity of the flexion increases as the radial side is approached.
6. The thumb never seems to present anything but a very mild form of flexion.

Rutherford Hospital.

Mental Disease Among Negroes.—The relative increase of negro patients in institutions for mental disease in the United States from 1910 to 1923 was greater than that of white patients. The rate of negro resident patients in 1923 was greater than that of white resident patients in thirty-seven of the forty-seven states. It seems probable that were equal institutional provision made for patients of the two races, the rate of negro resident patients would everywhere exceed that of white patients. The rate of resident negro patients was much higher in the northern geographic divisions than in the southern. The rate of first admissions in 1922 was higher among negroes than among whites in thirty-one states It is probable that mental disease is more prevalent among negroes than whites. Rates of mental disease among negroes are relatively high in early age groups. Among negro resident patients and first admissions, males exceed females. Syphilitic psychoses are more prevalent among negroes than among whites. The rates of negro first admissions in nearly every psychotic group are higher in New York state than in the country as a whole. The general recovery rate in 1922 was higher among negro patients than among white patients. The rates for males were higher than those for females in both races Death rates in most of the psychotic groups in 1922 were higher among negro patients than white patients — Pollock, H M : *State Hosp. Quart.* **11**:66 (Nov.) 1925

MULTIPLE ANEURYSMS OF LARGE VESSELS

REPORT OF CASE *

ANATOLE KOLODNY, Ph.D., M.D.
IOWA CITY

In about 0.1 per cent. of deaths in America, a thoracic aneurysm is the cause of mortality. This fact furnishes a relative idea about the clinical incidence of thoracic aneurysm of the aorta. Less is known about the frequency of aneurysms of large vessels other than the aorta, and nothing is known about the clinical incidence of aneurysms of the smaller vessels. These usually remain unrecognized, unless some complication draws the attention of the patient to the condition.

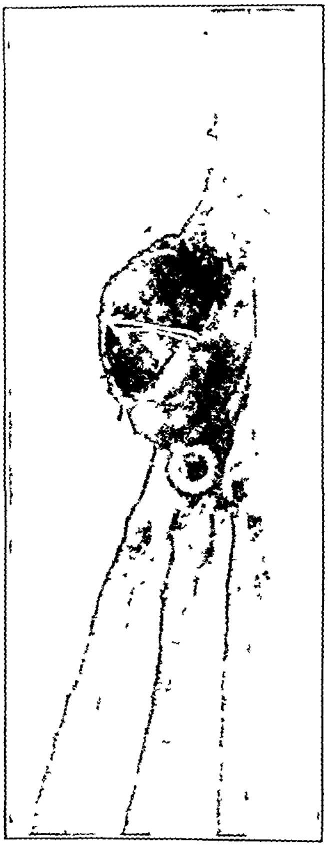

Fig 1.—The dissected large vessels of the amputated leg, showing an aneurysm of the popliteal artery at its division into the anterior and posterior tibial and peroneal arteries, the aneurysmal sac is opened to expose the partially organized blood clot in it.

Statistics compiled by American and European writers show that cases of multiple aneurysms of the aorta are encountered, although they are rare. Multiple aneurysms of the aorta would perhaps be diagnosed more frequently if looked for. Usually the recognition of one aneurysm satisfies the physician in his examination of the patient, so that no further search for pathologic change is continued. Multiple aneurysms of vessels other than the aorta are still a curiosity, with the exception of cerebral arteries, in which the small aneurysms are commonly multiple. The rarity of multiple aneurysms together with the unusual complication of thrombosis with complete occlusion of the blood vessel seem to justify this report.

REPORT OF CASE

C. C, an American man, white, aged 62, entered the University Hospital, March 22, 1925, with gangrene of the right foot. The last day of January, 1925, the patient was sitting in a chair, and when he stood up to walk, he was affected with a sudden severe cramping pain all over the calf of the right leg. The leg pained him every time he stepped on it. Over night the right leg became swollen from the knee down Pain in the leg with numbness and tingling kept the patient in bed for about ten days, when the swelling began to disappear. Soon the toes of the right foot began to turn black

On examination, the entire right foot was cold, and the distal half of the foot presented a dry gangrene. No distinct demarcation line was present. Pulsation was absent in the dorsalis pedis and the peroneal artery, but present in the popliteal artery. In the distal end of the popliteal fossa, a deeply seated, firm, well fixed, walnut sized mass could be palpated. No pulsation of the posterior tibial artery could be felt or heard distally to this mass.

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* From the Department of Surgery, State University of Iowa College of Medicine.

The systolic blood pressure on the right arm was 85; the diastolic, 50, and on the left arm, 140 systolic; 70, diastolic. There was very prominent sclerosis of all palpable vessels. The aorta could be easily palpated in the jugular notch. Retrosternal dulness measured more than 8.5 cm. In addition were found an aneurysm, measuring 11 by 7 by 4 cm., of the right axillary artery, an aneurysm the size of a hickory nut of the supraclavicular portion of the left carotid artery, and a walnut sized aneurysm of the right external iliac artery. A roentgenogram showed a sacculated aneurysm of the thoracic descending aorta, sclerosis and senile dilatation of the vessels of the extremities. The blood Wassermann reaction was strongly positive.

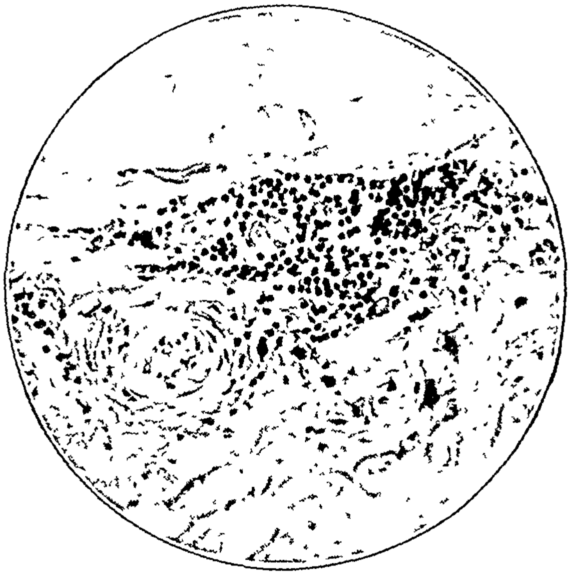

Fig. 2.—Section of the popliteal artery, showing the lymphocytic infiltration about the thickened vasa vasorum.

April 8, an amputation through the right thigh was done. The patient had a normal postoperative course until the seventh postoperative day, when he suffered a stroke, with complete blindness of both eyes and paralysis of the right upper extremity. The next day, vision began to return, and in a week no symptoms of the stroke were present.

In the dissection of the amputated leg, the popliteal artery, at the point of subdivision into the anterior and posterior tibial and the peroneal arteries, was found to be replaced by an aneurysmatic sac about 4 cm. in diameter. The sac was plugged by a blood clot of apparently long duration. The blood vessel walls were markedly sclerosed and calcified. The lumina of the anterior and posterior tibial and peroneal arteries were patent well downward.

A histologic examination of the popliteal artery above the aneurysm showed the intima thickened and hyalinized. There were plaques with deposits of cholesterin crystals. Sections stained for elastic tissue showed the internal elastic membrane frayed into separate accessory lamellae, which united on the farther edge of the plaque. The media showed thickening and scarring with a proliferation of fibroblasts and the formation of new vessels. The vasa vasorum showed an abundant perivascular lymphocytic infiltration.

COMMENT

The multiplicity of the aneurysms indicates that this is a case in which the resistance and elasticity of the vessel walls were lessened previous to the appearance of the aneurysms. Arteriosclerosis is the most frequent pathologic condition in which the elasticity of the vessels is lowered. The next in frequency is syphilitic arteritis, a condition which is very common in tertiary syphilis, and which only recently has been recognized as entirely separate from the true arteriosclerotic entity. There is sufficient evidence on hand that syphilitic arteritis and not the true arteriosclerosis is most responsible for aneurysmatic dilatations of vessels.

The presence of calcareous deposits and cholesterin crystals in the thickened intima and the fraying of the internal elastic membrane into separate accessory lamellae which unite on the farther edge of the plaques in the present case definitely speak for arteriosclerosis. On the other hand, the thickened media of the larger vessels and the lymphocytic infiltration about the vasa vasorum are distinct signs of syphilitic arteritis. In addition to this, the strongly positive Wassermann reaction and the multiplicity of the aneurysms also support the diagnosis of vascular syphilis in the present case. Here is, therefore, a case in which true arteriosclerosis is superimposed on tertiary vascular syphilis.

The thrombosis of the aneurysm of the popliteal artery with complete occlusion of the lumen of the vessel followed by gangrene of the extremity in the present case permits some interesting speculation as to the mode of development of this condition. It is known that the development of another aneurysm on the same vessel or on a direct extension of this vessel closer to the heart weakens the circulation in the older aneurysm, and may thrombose it. Such a thrombosis may lead to the so-called spontaneous cure of an aneurysm. In such a way, the presence of an aneurysm of the external iliac artery might have caused thrombosis of the popliteal aneurysm. However, such a thrombosis would be inconsistent with the acute course as seen in the history of the patient and evidenced by the gangrene; rather, an embolic process is suggested. The clot may have formed here as a result of the lodgment of an embolus in the distal end of the aneurysmal sac, leading to cessation of the circulation through the aneurysm and to thrombosis. The site of the aneurysm at the division of the popliteal artery into the anterior and posterior tibial and the peroneal arteries is quite typical for an embolus. The embolus could have originated in a mural thrombus of the aneurysm of the iliac artery or of the aorta.

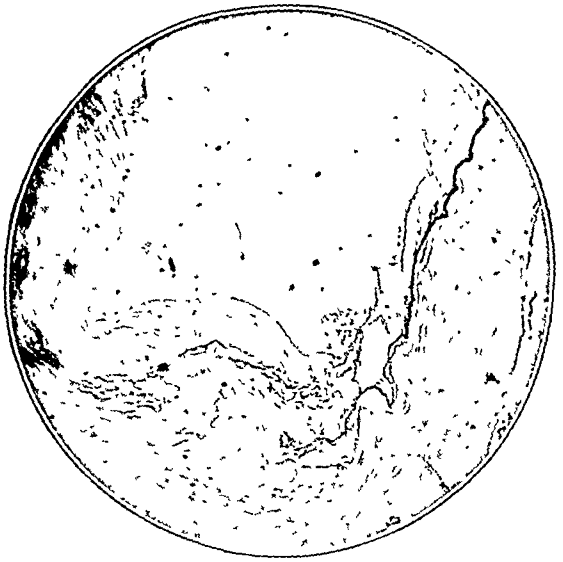

Fig. 3.—Section of the popliteal artery stained for elastic tissue; the internal elastic membrane is frayed into separate accessory lamellae at the edges of the sclerotic plaque.

THE SURGERY OF TRACHOMA

PRACTICAL PROBLEMS *

S. LEWIS ZIEGLER, M.D.
PHILADELPHIA

The surgery of trachoma usually begins where the acute infectious process leaves off. We are, therefore, most interested in the transition stages that lie within the borderland of chronic granular conjunctivitis.

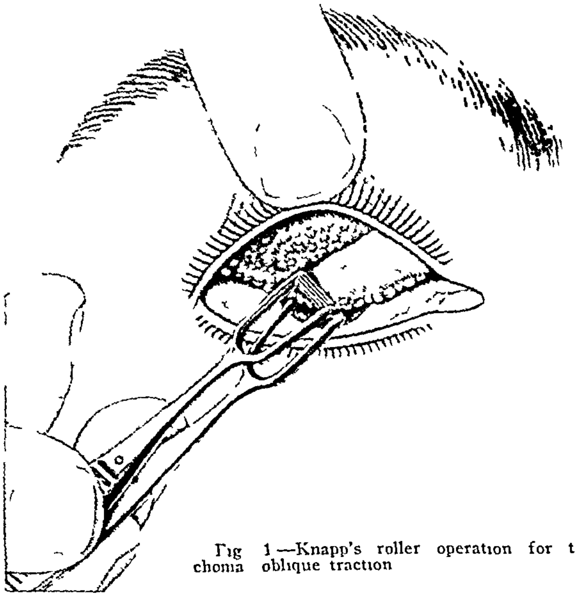

Fig 1.—Knapp's roller operation for trachoma oblique traction

Without considering the etiology of trachoma, I will proceed at once to a brief review of the lesions that cause its persistence. These are purely mechanical.

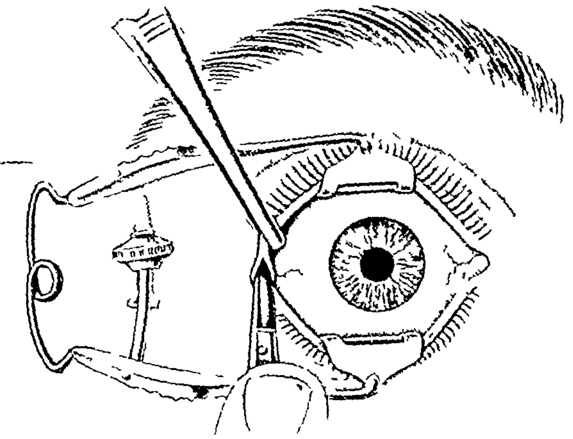

Fig 3.—Canthotomy (Ziegler) external canthus "nicked" with small scissors, lid held tense with heavy forceps superior canthal ligament severed (cantholysis); corner of lid should jump from 10 to 15 mm when ligament is cut

The two chief factors in this pathogenic dysfunction are (1) blepharophimosis and (2) lacrimal obstruction.

1. *Blepharophimosis.*—In the early stages of trachoma, blepharophimosis is caused by the acute swelling engendered by the hypertrophied papillae, the gelatinoid granulations and the engorged mucosa. In the later stages, cicatricial contraction of the conjunctiva, of the tarsal cartilage and, indeed, of the total lid structure add to the complications of our problem. The ensuing entropion with trichiasis and the consequent lid friction result in multiple erosion ulcers, or in pannus, strictly limited to the area of pressure contact covered by the superior palpebrum and visibly demonstrated by the typical line of demarcation that forms across the horizontal meridian of the cornea where it divides the pannus from the clear cornea. These corneal lesions will automatically disappear whenever the lid tension is properly relieved.

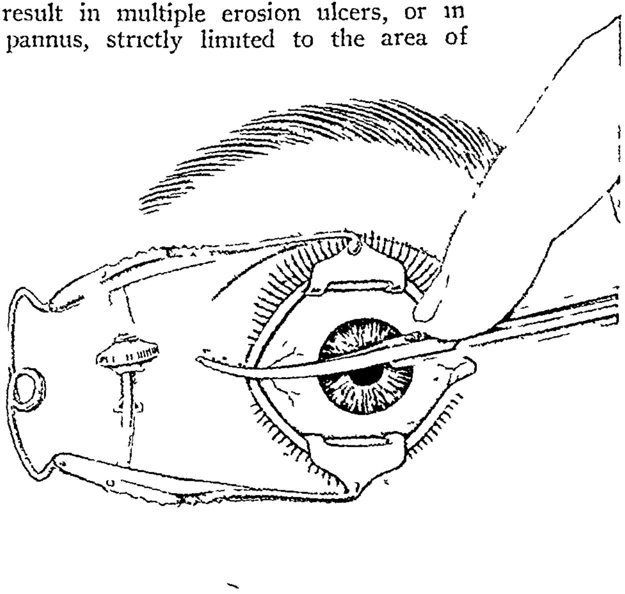

Fig 4.—Canthoplasty (von Ammon Agnew) canthoplasty scissors in position with curve directed upward and leaning more to skin surface

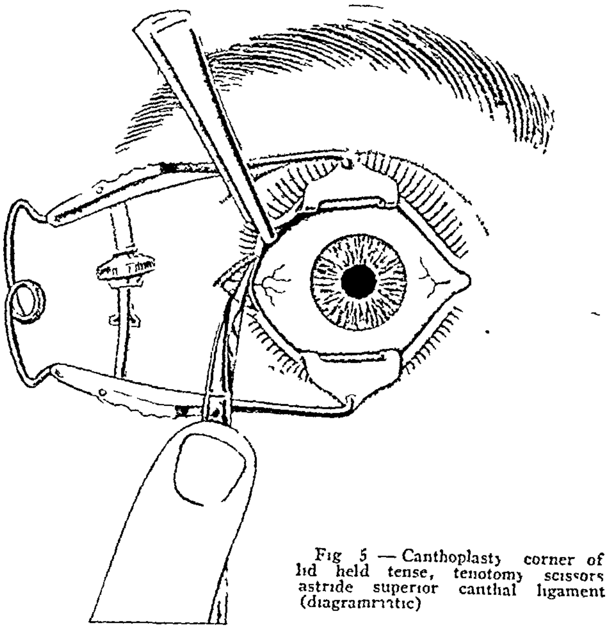

Fig 5.—Canthoplasty corner of lid held tense, tenotomy scissors astride superior canthal ligament (diagrammatic)

2. *Lacrimal Obstruction.*—It is not generally held in mind that the trachomatous process usually invades the mucous lining of the lacrimal canal and causes occlu-

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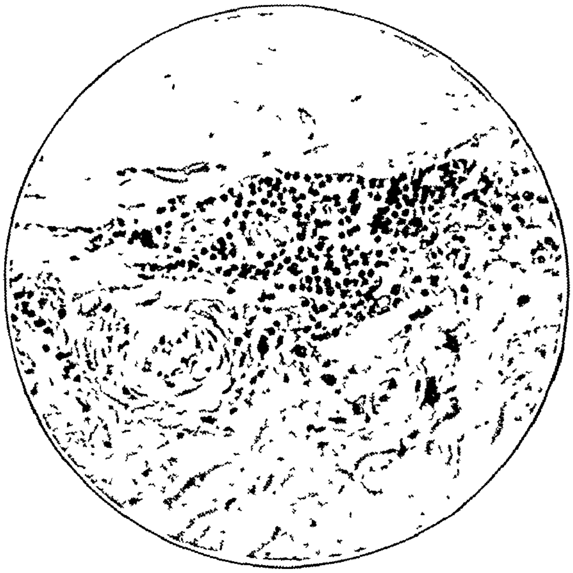

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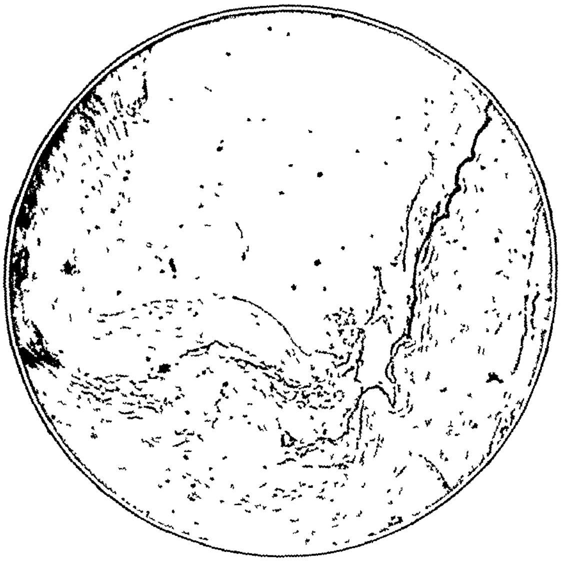

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THE SURGERY OF TRACHOMA

PRACTICAL PROBLEMS *

S. LEWIS ZIEGLER, M.D.
PHILADELPHIA

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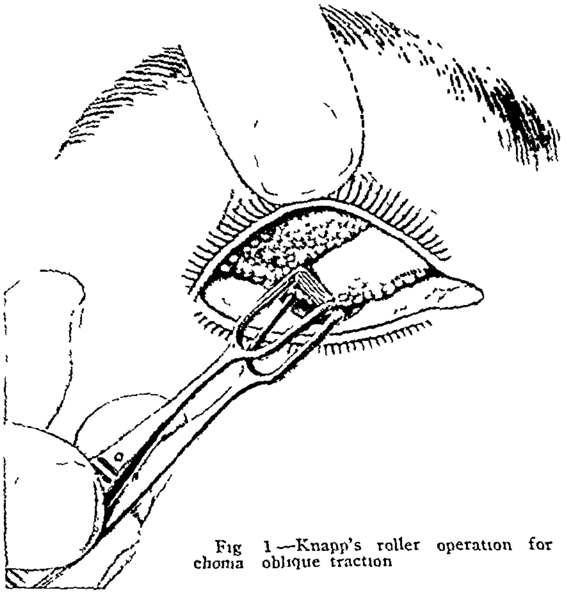

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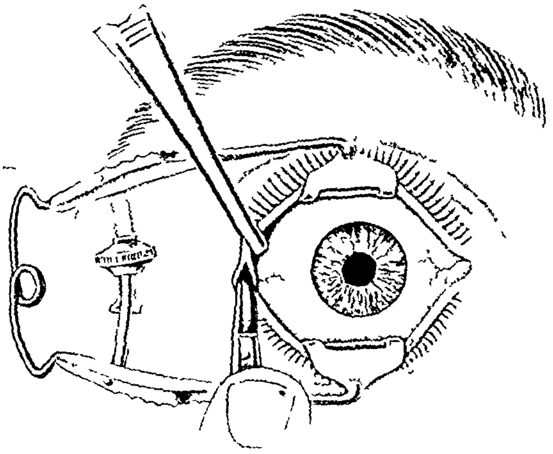

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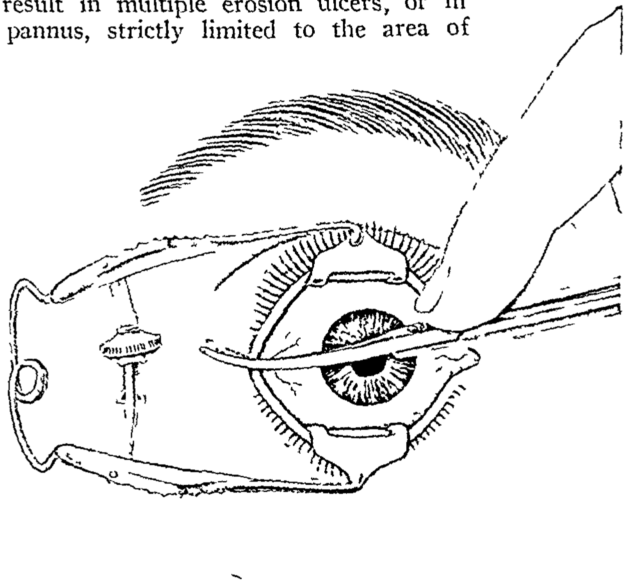

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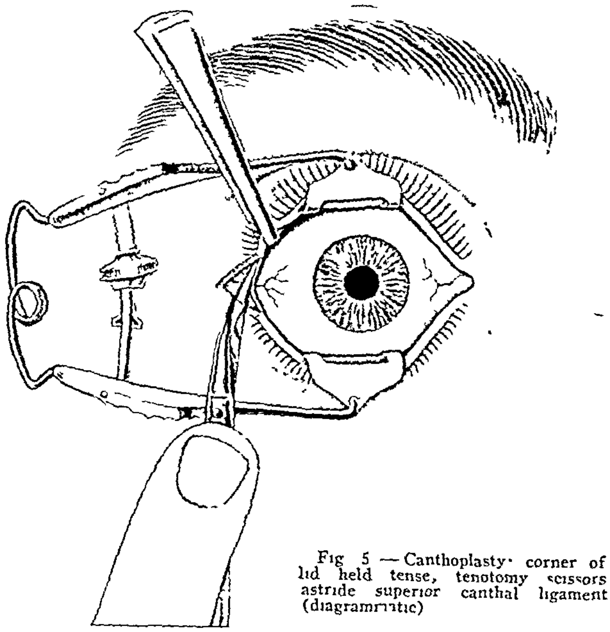

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sion of its lumen, accompanied by either simple epiphora or the more dangerous regurgitation of septic secretions. To this may be added the infectious conjunctival discharge and the hypersecretion of tears from reflex irritation of the lacrimal gland. This excess of moisture, especially if acrid or septic in character, in turn stimulates the growth of polypoid granulation on the conjunctival surface, and adds to the maceration that generally follows the corneal erosion engendered by lid friction. Nothing is more destructive than a tear-soaked mucosa. In fact, many trachoma operations that fail would have proved successful if the lacrimal lesions had been eliminated, their failure being wholly due to the excess of moisture that was persistently maintained.

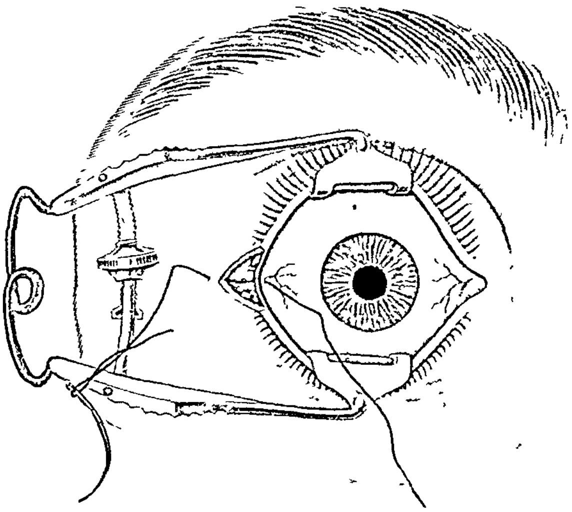

Fig. 6.—Canthoplasty: severed superior canthal ligament (cantholysis); central suture introduced.

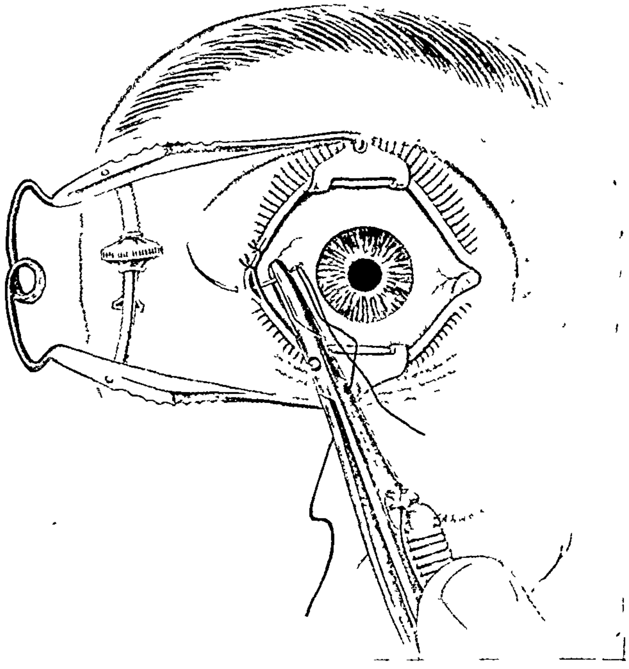

Fig. 7.—Canthoplasty: two sutures tied and third being introduced.

Bearing all these facts in mind, the practical problems in the surgery of trachoma narrow themselves down to the correction of two abnormal physical conditions, (*a*) lid friction and (*b*) lacrimal maceration.

THE CONSERVATIVE SURGERY OF TRACHOMA

1. *Knapp's*[2] *Roller Operation.*—I will refer briefly to a few salient points in the technic of expression. The upper lid should be everted, the granulations lightly scarified, and the tarsal cartilage compressed by strong roller forceps drawn obliquely downward with firm pressure (Fig. 1). This oblique direction of the movement makes easy the stripping out of the gelatinoid contents of the granulations without stretching too hard the retrotarsal fold. It should be repeated until the conjunctival surface is freed from granulations but corrugated by the mangles. If any granulations at the lower margin escape, they can be individually crushed. If by chance a few are overlooked, they can be frozen subsequently with a pencil of carbon dioxid snow. The prior introduction of my bident lid clamp (Fig. 12) will increase the efficiency of the Knapp roller forceps by furnishing a solid support for the mangles to roll over. Ice pads may be applied according to indications.

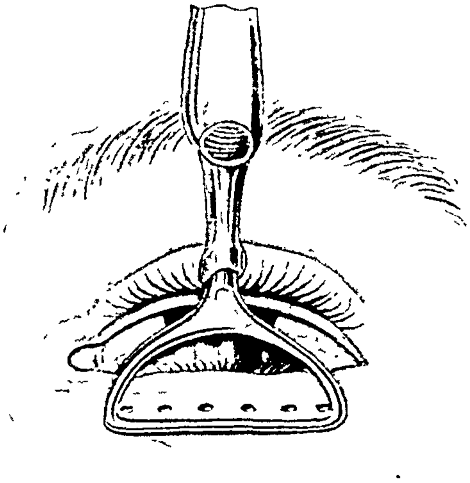

Fig. 9.—Galvanocautery puncture (Ziegler) for entropion and trichiasis: lid clamp adjusted; punctures on skin surface.

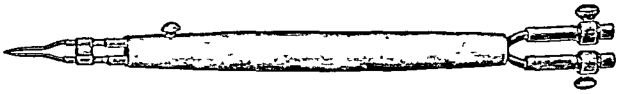

Fig. 10.—Galvanocautery handle and point for galvanocautery puncture operation in entropion (one third reduction).

2. *Freezing with Carbon Dioxid Snow.*—To remove the turgescence of the conjunctiva, nothing is so efficient as an application of carbon dioxid snow. This conservative procedure has been highly commended by Wibo,[3] Prince[4] and others. It has a remarkable action in destroying superficial pathologic new growth by causing rapid interstitial sclerosis. I have seen its unusual effects in the treatment of trachoma, spring catarrh, pterygium tenue and melanosarcoma of the limbus. Like galvanocautery puncture and desiccation, it happily leaves behind a nicely rehabilitated mucous surface without any tendency to the production of dense, cicatricial tissue. The end-result is a beautiful, smooth conjunctiva.

Technic of Preparation.—The pencil of carbon dioxid snow is prepared as follows: A tank of carbon dioxid gas (Fig. 2) is procured from a pharmacy or other purveyor of soda water. When the tank is inclined obliquely (about 45 degrees) it will be found to contain sufficient liquid carbon dioxid to supply office needs for at least one year. The average commercial tank measures about 46 by 6 inches and costs $3.50 for the contained gas (the tank is returnable). It can be supported on the wall by a staple and a ring, or set up against the angle of the wall on a small wooden box. The nozzle should be turned downward and the valve cautiously opened. No attachment is necessary. A chamois or napkin may be held in the hand, compressed or hollow, with an ear speculum or a silver spoon placed in its center. The speculum will form a "pencil" of snow, and the spoon a "lozenge." The napkin is held near the nozzle but not too close, since the gas rushes out with some force, sputtering and often scattering the newly formed pencil of snow. The gas must not be allowed to blow on the fingers, or they will soon freeze. Silk gloves are a protection both in the formation and in the handling of the pencil. When enough snow has formed, it can either be kneaded in the napkin to harden or condense it; or, if already hard, it can be trimmed to the proper size with a knife. As the snow is quite dry, it crumbles easily. The pencil should be a trifle smaller than the area to be treated.

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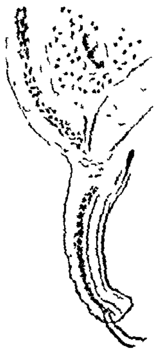
[2] Knapp, Herman: Demonstration of a Roller Forceps Constructed According to the Mangle Principle for Pressing Out Trachoma Granulations, Tr. Am. Ophth. Soc., 1891, p. 148.

[3] Wibo: Carbonic Cauterization in the Treatment of Granular Ophthalmia, Ann. d'ocul., March, 1913.

[4] Prince, A. E.: Frozen Carbon Dioxid in the Treatment of Trachoma, Vernal Catarrh and Pterygium, Arch. Ophth. 45: 219 (May) 1916.



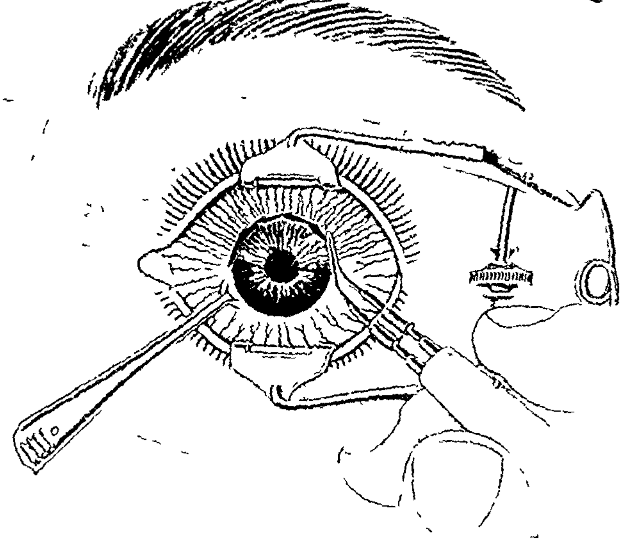
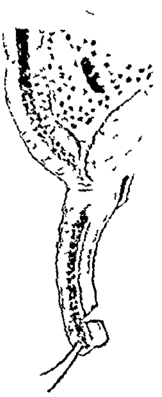


Fig. 11.—Galvanocautery peritomy (Ziegler).



Technic of Application.—The pencil of carbon dioxid snow is applied by holding it on a given area for a duration of only three to five seconds. The whole area must be treated. If the pencil is not large enough to cover the whole area, it should be applied to successive sections; one should always be alert to remember both the area and the time limit. When the pencil has been removed, the area that was covered will present a whitish appearance and should remain quietly exposed for about thirty seconds to allow the surface to thaw out. The retrotarsal fold should be turned out with Darier's lid forceps. If the lower lid is involved, it should be drawn down and the surface frozen in the same way. If there is danger of dropping the snow on the cornea, a Jaeger lid spatula should be slipped under the lid for protection.

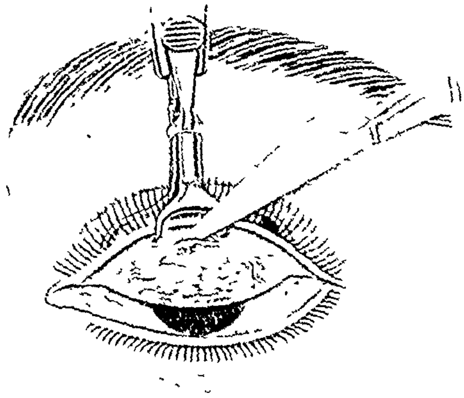


Fig. 12.—Burow's operation: splitting the cartilage; puncture with Beer's knife, bident lid clamp (first stage, Kuhnt Heisrath tarsectomy).

As too long an exposure may cause sloughing, it will be necessary to judge of the vitality of the tissues before applying the snow. Sometimes the reaction is quite marked. If the rolling of the lids has not been recent, a mild scarification should first be made. For the aftertreatment, ice pads are indicated as circumstances require. If, at the end of a week or ten days, inspection should reveal an area that has been overlooked, a smaller pencil of the carbon dioxid snow may be applied to this limited area. Occasionally, several applications are necessary in order to

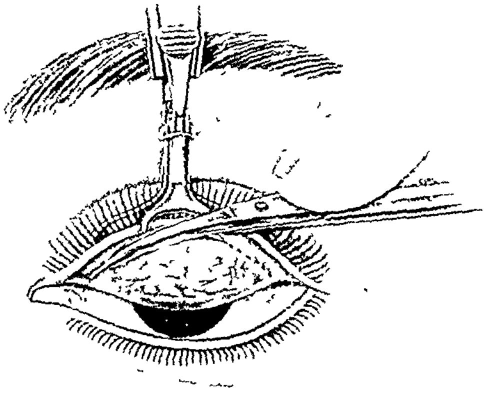


Fig 13.—Burow's operation: dividing the cartilage with scissors (first stage, Kuhnt Heisrath tarsectomy).

this is a simple procedure, experience and judgment are required for its proper execution.

3. *Canthotomy.*—The best procedure to relieve lid tension is cantholysis or section of the superior canthal ligament. I began the surgery of trachoma by first performing a free canthoplasty, then added cantholysis, and finally depended wholly on this section of the canthal ligament, which I performed subcutaneously, as it were. I found that this simpler procedure of canthotomy with cantholysis would yield almost as much lid freedom as the larger canthoplasty, and with much less deformity. Only three instruments are necessary: a speculum, a heavy rat-tooth fixation forceps, and a pair of small, sharp-pointed tenotomy scissors.

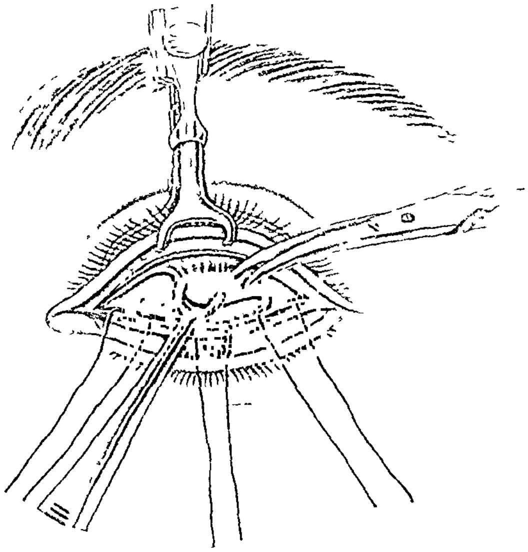


Fig. 14.—Kuhnt-Heisrath tarsectomy: excision completed with scissors; horseshoe fixation forceps; mattress sutures inserted in proximal edge of wound.

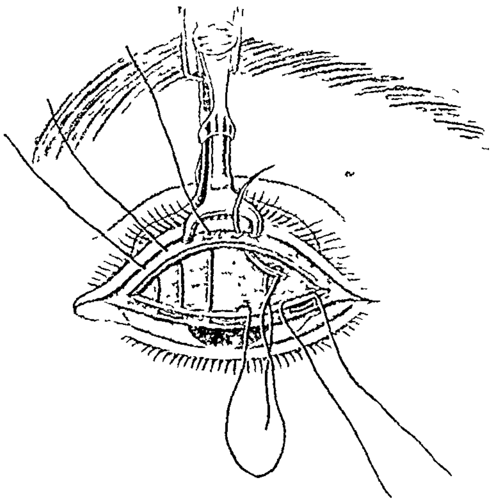


Fig. 15.—Mattress sutures inserted in ciliary edge of wound.

Technic of Canthotomy.—The corner of the upper lid is grasped by strong forceps at the external canthus, and traction made up and in to hold the canthal ligament tense (Fig. 3). With the small scissors, the angle of the external canthus is "nicked" and the sharp-pointed scissors pushed into this small wound until the tense canthal ligament is felt by stroking their points across it, just as one would feel for the optic nerve in performing an enucleation. As soon as one feels the ligament, one opens the scissors astride it and divides the ligament near its attachment to the bony margin of the orbit so as to avoid any injury to the lacrimal gland. The corner of the upper lid held by the forceps will jump up about a centimeter when the ligament is severed. If one does not get that sudden freedom of the upper lid, one has failed to divide the canthal ligament. If desired, the small wound may be closed with a single suture of No. 1 braided silk; but this is not always necessary. The benefits of canthotomy are notable because immediate improvement is observed and permanent good effects are maintained.

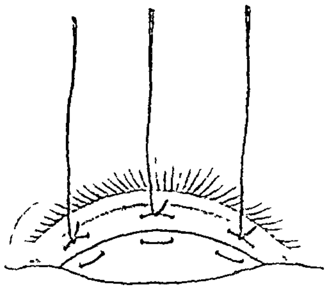


Fig. 16.—Horizontal mattress sutures tied: ends left long.

The inferior canthal ligament should never be divided except in cases of extreme cicatricial contraction of the inferior lid border, which is seldom observed. Such a section of the inferior ligament is liable to cause a lax ectropion that is difficult to correct.

4. *Canthoplasty.*—This free division of the canthus was devised by von Ammon,[5] and improved by Agnew,[6] when he added cantholysis to the former's operation. Agnew, however, advised suturing the wound vertically instead of horizontally, which closed the wound again, so that the final effect was practically the same as that obtained with my simpler canthotomy. Where there is cicatricial contraction, slightly greater freedom will be secured from canthoplasty than from canthotomy. Von Ammon's technic is the one that is usually followed, but Agnew's addition of cantholysis yields a far superior result. Straight scissors are usually recommended, but a study of the facial expression after operation will prove convincing that the curved scissors with points directed upward will furnish a more pleasing effect, because they give the patient the appearance of smiling, while the straight scissors yield a sorrowful expression.

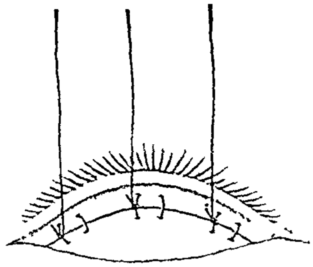


Fig. 17.—Vertical mattress sutures tied; ends left long.

Technic of Canthoplasty.—The canthoplasty scissors are placed astride the external canthus, with curved blades directed upward and turned slightly outward so as to cut more of the skin surface than of the conjunctiva (Fig. 4). The skin is unyielding but the conjunctiva usually stretches a little, or can easily be made to do so. The upper lid is then grasped by the strong forceps, the superior canthal ligament drawn taut (Fig. 5) and severed by the same technic as described under the procedure of canthotomy (Fig. 6). Three sutures of No. 1 braided silk are then inserted (Fig. 7) to join the skin and conjunctiva together, the central one being entered first and tied so as to secure good apposition. Some omit the sutures; but this is unsurgical, since distortion and granulomas may result. If the lacrimal gland is injured, a lacrimal cyst may follow, which is troublesome to relieve. Occasionally a small artery is severed that will require torsion or ligature.

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[5] Von Ammon: Ztschr. f. Augenh. u. Chir. 2: 140, 1839.

[6] Agnew, C. R.: Canthoplasty as a Means to Oppose Certain Maladies of the Eyes, Ann. d'ocul. 2: 181, 1875.

5. *Rapid Dilation of the Lacrimal Canal.*—A patulous tear duct is most essential to drain off the acrid lacrimal secretions and thus relieve corneal maceration by drying up the excessive moisture. I have twice discussed the advantages of this method of relief before this section, in 1910 [7] and 1922.[8] It is better to avoid incision of the canaliculus because of the tendency to cicatricial contraction that is present in a xerotic conjunctiva. In some cases, however, Bowman's operation may be necessary. My lacrimal dilator occurs in six sizes: 1.5, 2, 2.5, 3, 3.5 and 4 mm. (Fig. 8). These are equivalent to Theobald's probes, Nos. 6 to 16.

Technic of Rapid Dilation.—The small dilator (1.5 mm., or No. 6, same as needle-probe) is entered vertically into the punctum and passed horizontally through the canaliculus until its point rests solidly against the bony wall of the sac. It is then withdrawn and the large dilator (3 or 3.5 mm.) substituted, and passed through the canaliculus until the point rests against the bony canal. The shaft of the dilator is now raised to the vertical, half rotated with bayonet to the rear and forcibly passed backward, downward and forward through the duct until its point rests on the floor of the nose. It is then withdrawn.

Rapid dilation of the lacrimonasal canal retains the capillary action of the duct and so directs the current of lacrimal drainage downward into the nose. The relief from lacrimal maceration will promptly be made evident.

6. *Galvanocautery Puncture for Entropion and Trichiasis.*[9]—The ill effects of lid friction arising from incurvation of the tarsal cartilage, combined with trichiasis, are so manifest that the possibility of securing relief by so simple a procedure as galvanocautery puncture has proved to be a great boon. Many serious plastic operations that have been ingeniously devised to relieve these complications have been made wholly obsolete by the efficiency of this simple procedure. As the technic becomes more familiar by practice, many additional indications will be found for its application. It should always be remembered that a hot cautery point in the presence of ether will cause an explosion.

Technic of Galvanocautery Puncture.—The lid clamp is adjusted over the skin surface of the lid, with its straight bar set parallel with the margin (Fig. 9). The galvanocautery point (Fig. 10) is applied to the skin surface with pressure, the current is turned on, and a quick thrust is made through the cartilage and the point as quickly withdrawn. The punctures are located at intervals of 4 mm. and at the same distance from the lid margin. In ectropion, the same technic is executed on the conjunctival surface.

If preferred, the current can first be turned on to heat the cautery point and the punctures executed with a "free hand" by making them as "quick thrusts." Under no circumstances should slow punctures be made, since prolonged contact is dangerously destructive. The charred eschars may be removed, and solution of formaldehyd, U. S. P., in 1 per cent. dilution, applied to each puncture. If there is any reaction, ice pads should be used as needed. No dressing is required. The immediate effect is quite noticeable. Healing occurs in one week. The procedure can be repeated in two weeks if it is evident that the condition is not sufficiently corrected. The second set of punctures should alternate with the first set.

Where there are irregularities in the lid margin and the lashes are not uniformly distorted, the surgeon will have to exercise his ingenuity to meet the emergency. If only one or two eyelashes are displaced, a small cautery point can be used to make a puncture below the root of each individual lash without going through the cartilage, thus turning out the lash alone but not affecting the position of the tarsal border.

7. *Galvanocautery Peritomy for Pannus.*—When the pannus does not disappear automatically after correction of these lesions by the procedures described, there is indicated for its relief either the simple pericorneal incision known as peritomy, or the more radical excision of a strip of conjunctiva around the cornea known as peridectomy. I prefer, however, to practice a different procedure, which I have designated as galvanocautery peritomy (Fig. 11). A series of deft touches with the galvanocautery point are lightly made around the superior limbus until the precise area of vascularization is cut off. If there are dilated vessels on the cornea, they may also be touched along their course. Too deep a burn over the ciliary body may set up glaucoma, while H. Knapp has warned us that overheating of the aqueous may result in cataract.

The eschar may be carefully removed and solution of formaldehyd, U. S. P., 1 per cent., applied. No dressing is required, but mercuric chlorid ointment should be placed in the culdesac. Ice pads are indicated, according to circumstances. This is a most efficient procedure if properly performed. It is an emergency measure that is seldom required.

THE RADICAL SURGERY OF TRACHOMA

As previously stated, two procedures are available for those cases that require more radical relief: Burow's operation of splitting the tarsal cartilage for the milder cases, while the extremely chronic cases that are beyond all hope of conservation should be cared for by the more radical Kuhnt-Heisrath excision of the tarsal cartilage. In fact, the first named procedure may be considered the primary stage of the latter. Whichever one of these measures is decided on, it should be preceded or supplemented by three of the conservative procedures previously described: canthotomy, galvanocautery puncture, and rapid dilation of the lacrimal canal. These should always be made a sine qua non in all operative procedures for the surgical relief of trachoma.

8. *Burow's*[10] *Operation.*—This is quickly accomplished by fixing the upper lid with the bident lid clamp, making a small puncture of the tarsus near the ciliary

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[7] Ziegler, S. L.: The Radical Treatment of Lacrimonasal Disease by Rapid Dilatation and Allied Measures, J. A. M. A. **54**: 2026 (June 18) 1910.

[8] Ziegler, S. L.: A Further Note on Rapid Dilatation in the Radical Treatment of Lacrimonasal Disease, J. A. M. A. **78**: 1701 (June 3) 1922.

[9] Ziegler, S. L.: Galvanocautery Puncture in Ectropion and Entropion, J. A. M. A. **53**: 183 (July 17) 1909.

[10] Burow: Berl. klin. Wchnschr., June, 1873, p. 295.

margin with a Beer's knife (Fig. 12) and executing a division of the cartilage along the gray line with strabismus scissors (Fig. 13). The scissors should hug the cartilage closely so that no other structures will be divided. By cutting first from the center toward the inner canthus and then turning and cutting from the center toward the outer canthus, the incision is easily completed. A compress and bandage is usually applied for twenty-four hours. Occasionally a divided artery must be controlled, and sometimes a secondary hemorrhage will occur during the first night. This splitting of the tarsal cartilage by making a flail-like hinge of the upper lid will accomplish three things: (1) turn the margin of the lid outward, (2) relieve the trichiasis, and (3) add greatly to the lid freedom.

9. *Tarsectomy by the Kuhnt-Heisrath Method.*—Tarsectomy was first suggested by Heisrath[11] (1882) and later improved by Kuhnt[12] (1897). Blascovics[13] asserts that conjunctival contraction is responsible for the incurvation of the cartilage. He loosens the whole cartilage, leaving an anterior pedicle, and then turns it over, end for end. He adds mattress sutures, which he passes out through the intermarginal line and ties there. This permits of their removal from the skin surface without disturbing the conjunctival wound.

Technic of Tarsectomy.—The splitting of the cartilage just described under Burow's operation may be accepted as the primary stage of tarsectomy (Figs. 12 and 13). With the bident lid forceps retained in place, an incision is next made along the proximal border of the cartilage with the knife. This permits the insertion of three double armed mattress sutures of No. 2 black silk in the lower edge of the wound, with the loop of thread resting on the conjunctival surface (Fig. 14). The assistant makes traction on one or all of these threads as the surgeon grasps the ciliary edge of the cartilage with horseshoe forceps and turns it downward, while he uses the scissors as a blunt dissector, or clips away the pretarsal tissues until the cartilage is wholly excised and the retrotarsal fold dissected loose. The mattress sutures are now passed through the ciliary margin of the wound (Fig. 15) and drawn taut, after which the bident lid forceps are removed. The threads are then tied in good approximation, leaving exposed the horizontal loops of three mattress sutures (Fig. 16).

An alternate arrangement permits insertion of these sutures so that the exposed loops will rest vertically across the open wound, which makes better approximation. In this technic the needles are dipped into the conjunctival tissue parallel with each margin of the wound, and when the sutures are tied vertically across the wound they appear more typical of the mattress type (Fig. 17). In either case, one end of each suture is left long and the three ends are fastened together on the cheek by adhesive plaster. This facilitates the removal of the sutures on the fifth day, as they can be drawn down and clipped without disturbing the wound.

Since corneal ulceration has occasionally followed the pressure of the threads on the cornea, it will be the part of wisdom to insert mercuric chlorid ointment into the culdesac as a lubricant and antiseptic. If there is reaction, ice-pads should be applied as needed.

Many serious deformities have been apprehended as the sequelae of tarsectomy,. such as lagophthalmos or ptosis; but, if the technic is properly followed, no untoward result need be feared. Healing is usually uneventful, but the palpebral aperture will probably be a little wider, owing to the vertical shortening of the lid. Each advance in this operation has been in the direction of conservation of tissue. Hence an earnest effort should first be made to regenerate the retrotarsal fold by rolling and carbon dioxid snow before sacrificing it.

SUMMARY

1. The complications of trachoma are persistently maintained by two mechanical processes: (1) lid friction, from blepharophimosis and trichiasis, and (2) lacrimal maceration, from perversion of the tears and obstruction of the duct by trachomatous invasion.

2. The practical problems involved are (1) to preserve normal tissue by conservative surgery, or, if this fails, (2) to resort to radical surgery.

3. The conservative surgery of trachoma calls for (*a*) canthotomy and (*b*) rapid dilation of the duct, combined with (*c*) galvanocautery puncture, (*d*) Knapp's roller operation and (*e*) freezing by carbon dioxid snow; while (*f*) galvanocautery peritomy may be used to relieve pannus.

4. The radical surgery of trachoma requires, in addition, (*g*) Burow's splitting of the cartilage or (*h*) Kuhnt-Heisrath's tarsal excision.

1625 Walnut Street.

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[11] Heisrath: Ueber die Behandlung der Granulom, Berl. klin. Wchnschr., 1882, Nos. 28, 29 and 30.

[12] Kuhnt: Ueber die Therapie der Conjunctivitis granulosa, Klin. Jahrb., 1897, p. 413.

[13] Blascovics: Ztschr. f. Augenh., 1906, p. 391; Arch. f. Ophthal., January, 1925, p. 38.

THE TRACHOMA PROBLEM AMONG THE NORTH AMERICAN INDIANS *

L. WEBSTER FOX, M.D.
PHILADELPHIA

The subject of trachoma is inexhaustible. Most of the literature is confined to European trachoma, with here and there an excursion into the American type, as it exists in the big cities and in the mountain fastnesses of this or that Southern state. But the searcher after truth will be amazed to find how few recorded observations there are as regards a permanent population wholly under the domain of the federal government, whose life and habits permit of continuous surveillance. When the governmental agencies take an interest in the citizens of any of the sovereign states, the question is raised as to their authority to do so; yet here is an entire people, over whom the federal government has unhampered authority, who are affected from time to time with infectious diseases and yet the medical profession, as a whole, has paused not at all to consider these affections as of more than passing interest.

According to the statistics released by the Department of the Interior, Oct. 6, 1924, there were 346,962 Indians of record in the United States. There were in addition about 60,000 who had surrendered their tribal identity and had mingled with the whites, making approximately 400,000 persons in all. It is regarded by the same source as doubtful whether the Indians have ever numbered more than that number since the advent of Columbus. In the last eleven years, the population has increased 16,283. In the year ending June 30, 1924, the increase was 2,619. The state of

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* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

Oklahoma still has the largest Indian population, about 119,989. In fourteen other states, the number is more than 5,000. In Arizona, for instance, there are 42,841, while in South Dakota there are 23,962. In New Mexico there are 20,834, and in Minnesota there are 13,920. In California there are 18,702, and in Montana there are 12,953. Washington has 12,264, but we are surprised to find in North Carolina 11,949. These are a few of the large Indian groupings, and they must be mentioned in order to gain a proper idea of the importance of studying these people from an epidemiologic standpoint.

The Department of the Interior, through Secretary Hubert Work, informs us that trachoma under the names of "granular sore eyes," "granulated lids" and "Indian sore eyes" has been known to the Indian Service for a great many years. While the identification of these several ocular conditions with true trachoma must at best be but a matter of speculation, we do find a significant item in the reference to a kind of grattage performed by the medicine men of several of the tribes by an improvised scraping instrument, such as a part of a section of a reed with one edge sharpened by rubbing it on an abrading surface or by scraping it to thinness with a piece of glass, or by the use of sharp-edged reed leaves cut in short pieces so that they would not bend.

The mystic haze that has surrounded this subject in official circles has so intrigued me that search for more information was inevitable. However, recourse to more than thirty authoritative Indian works, as well as personal communications with missionaries and other competent observers, elicited only this information that may be regarded as reliable—that from time to time there have occurred pronounced epidemics of eye disease, epidemics that spread with great rapidity through the tribes and then subsided. And again, epidemics of like character recurred when the children of the tribes were sent to the government boarding schools.

In the last twenty years it has been my privilege to observe the Indians in the Carlisle School, in the Northwest and in Alaska; and, while the disease did exist and was recognized by the Indian Medical Service as trachoma, it presented no such problem as it has in the last few years. In 1923, in the little group of 1,168 people adjacent to Glacier National Park, there were found by the physicians of the Indian Bureau 351 cases of the disease. According to the way one looks at this, it may seem large or it may seem small; but if a glance is given the figures of the department after a survey made in the fall of 1924, the government's estimate of the existence of 27,856 cases of trachoma will convince even the most indifferent reader that our Indian population occupies a position of commanding importance among the trachoma countries.

While the disease appears in two principal types—the acute granular and the cicatricial—the granular is unquestionably the most pronounced granular conjunctivitis it has been my privilege to observe. The mild forms observed in the Eastern cities somewhat dull one's appreciation of how violent and virulent this affection may become, and the student could do no better than to stop off at one of these reservations and observe a few of these cases.

The activities of the federal government in the past have been limited by the funds at its disposal. Until 1910 there was no special appropriation made for health work, such work being carried on as a part of the agency and school work. The first appropriation in 1910, of $12,000, marks the beginning of the special work in trachoma. As a result of this appropriation, more than 700 cases received special treatment in the hospital at Phoenix alone, and many others at the different agencies. The regular physicians, awakened by the specialists sent to them, found that about 20 per cent. of those examined (in all, about 20,000) had the disease.

This appropriation was special. The purpose to which the funds of this appropriation were applied is fairly well designated in the title, "Relieving Distress and Prevention, etc., of Disease Among the Indians," and in general it was used to support sanatoriums for tuberculosis and to maintain hospitals where tribal funds are not available. Special physicians for the treatment of diseases of the eye, ear, nose and throat, and field dentists are paid from this appropriation, as are also two medical supervisors, so that it should not be regarded as the only source for the obtaining of medical service. However, in 1915, it had been increased to $300,000, reaching $375,000 in 1922; but, under the pressure of persistent agitation, this fund for 1925 has been increased to $500,000, which is a source of great satisfaction to those of us who have taken an interest in the situation. Sufficient money is the first essential in handling this kind of problem.

Unfortunately, some of the well meaning but misguided agitators could see no way of meeting the emergency except by complete housecleaning and disorganization prior to reconstruction. This was manifestly an error, as the disease was progressing while debate was in progress. However, the Bureau of Indian Affairs, with the little encouragement it received, promptly recognized the gravity of the situation and expanded to meet conditions. In October, 1924, the Indian Office had an authorized force of seven ophthalmologists and thirteen nurses traveling through the trachoma country, treating trachoma and other eye diseases. The several trachoma experts that had been developed out of the 200 agency physicians were thrown into the breach, and intensive treatment was begun. One ophthalmologist was sent throughout the several stations instructing the physicians and organizing campaigns. An endeavor was being made to make each physician an expert in the disease as it occurred in the Indians.

To the increase in funds and a growing sentiment for action, Commissioner Burke added, with stimulating naïveté, the dictum that the Indian physicians must learn how to handle the disease or get out of the service. This acquisition of knowledge was to be obtained by attendance at the special clinics provided by the government, and learning how to do the operations recommended.

Trachoma has been considered many thousand times as regards its treatment, and while each case may present some features that set it apart from others, the handling of a great group must be approached with some definite policy agreed on beforehand. Certain local applications have been held in high regard for many years, and doubtless do great good in properly selected cases. But the Indian cannot be considered as in the class that will stand for protracted treatment of any kind. Indians will not come to the physician for local applications more than a very few times, and will not use such medicines in their own habitations. The Indian physicians know this, and it occasions them considerable chagrin, time and again, when simple conditions could be handled by local applications in their beginning. Unless the case can be *hospitalized, there is little progress.*

The Indian is a born skeptic anyhow, and must be handled by those familiar with his temperamental vagaries. It is therefore rather difficult to impose on him a new organization. He will run from the entire outfit. This explains the wonderful progress the Bureau of Indian Affairs has made with this problem, once given the opportunity to expand its organization along the line of well tried fundamentals.

In 1923, it was my privilege to visit the Blackfoot Reservation in Montana.[1] Here I encountered only encouragement, and the results were very gratifying.

At a subsequent visit, in 1924, to the same reservation, I held teaching clinics, and the results of the previous year were carefully studied. By a most fortunate circumstance, several patients on whom I operated while they were pupils of the Carlisle School in Pennsylvania were members of the tribe and served to introduce me to the Indians and to vouch for me in the proper manner.

The work here was indeed pleasing to all concerned, and it was with no little satisfaction that the honor of being made a member of the tribe was conferred on me. The officials of the bureau were evidently impressed, as the program subsequently instituted by them embraced the principles enunciated at the clinics.

A subsequent visit to the Navajo Reservation in January, 1925, found this program in full blast, under the able command of Dr. J. S. Perkins. During this visit teaching clinics were held, and fourteen of the Indian Bureau physicians attended and took part in the operations.

The medical phase of trachoma is not without interest, *despite the feeling in some quarters that the operations* do not do all that is expected of them. Certain it is that local applications do very little among the Indians. The only prophylactic measure of any importance is to render the host of the disease inert from a trachoma standpoint. It is extremely difficult to teach these ignorant Indian women that the bottom hem of their skirts is not the proper thing with which to wipe their noses and their babies' eyes. The urging of health journals, such as *Hygeia,* on them would be ridiculous, and even the talks to the youngsters accomplish very little.

Whether one delights in the performance of the scraping operation known as grattage or not, the fact remains that this removes the disease more quickly and with less deformity than the way Nature goes about doing it.

There will always be a definite percentage that will resist this operation, and the procedure will have to be repeated. The scarring is very little, if any, but sometimes there is a slight incurving of the lid, a mild form of entropion, and to obviate this the operation of slitting of the cartilage, known as Burow's operation, is combined with the grattage. The grattage operation is for the granular stage, and is really the only operation directed against the disease itself, the infecting agent doubtless being contained within the granulations. If all the granular trachoma patients could be presumed to be operated on at once, trachoma would be under control.

The Bureau of Indian Affairs, through Charles H. Burke, commissioner, and E. B. Merritt, assistant commissioner, is attempting to have all these patients *operated on within a year, thus rendering such patients* inert so far as disseminating the disease is concerned.

In the stage of cicatrization, the disease is considered only from the individual standpoint. Can we make such patients more comfortable and can we prevent them from spending the remainder of their days in darkness? The resection of the tarsal cartilage unquestionably makes the patient more comfortable—reduces the irritation of the cornea and lessens its opacification, thus changing the whole complexion of the disease. We have endeavored to instruct the men in the Indian Medical Service in the technic of these operations as we know them, and we have been equally astonished with them at the spectacular results obtained.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. ZIEGLER AND FOX

Dr. J. A. Stucky, Lexington, Ky.: Until five or six years ago I used practically the same technic as described by the authors, the object being to relieve the photophobia and lid friction from blepharophimosis and trichiasis. I have not found lacrimal obstruction in very many cases; hence I have ceased to use forcible dilation as a routine measure. Its use produced too much traumatism and complications, defeating the object of the treatment. I convince myself that there is no retention in the lacrimal sac by irrigation or the use of the small lacrimal probe. Further prevention of maceration from a tear soaked mucosa is prevented by abstaining from the use of bandages or dressings of any kind. Emphasis is placed on accomplishing the restoration of physiologic function with the least possible destruction of tissue. Xerosis of the conjunctiva and limitation of the functional movements of the globe are terminal disasters that should always be borne in mind. I rarely resort to more radical surgery than that of grattage either with Knapp's roller forceps or a tightly wadded pad of gauze. I have found the canthotomy and severing of the superior canthal ligament as described frequently followed by spectacular results because of the removal of the mechanical irritation. The galvanocautery puncture for entropion and trichiasis has not given me the same results as the plastic operation, nor have I obtained as satisfactory results from the operation of periotomy for pannus, the latter being a sequela of the mechanical friction and speedily relieved after the friction is removed. Burrows' operation and the Kuhnt-Hiesrath tarsectomy have not proved successful in my hands. The retraction and lid friction continue in many instances. The pathos of the whole trachoma problem is that frequently the disease returns and we have exacerbations and flare-ups, unless we continue the follow-up treatment by cleanliness and dietary measures. In the last five or ten years my ideas of trachoma, its etiology and treatment, have undergone a decided change.

Too many cases of folliculosis and conjunctivitis are treated as trachoma resulting in cicatrized lids, often with obliteration of the posterior fold of the conjunctiva. Keratitis, ulceration and iritis often persist, and in these protein therapy has given me most satisfactory results.

I do not use grattage as frequently as I did, instead touching the trachomatous parts of the lid with a pencil of ammoniated copper. This in many cases causes severe pain for a short while and the lids should be anesthetized thoroughly before this remedy is applied. Equal in importance to this surgical treatment is the diet, and when I have been able to keep the patient on a well balanced diet plus cod liver oil and malt for some months there have been no recurrences of the disease in cases which I have observed for four or five years. The people in the mountains use little or no milk or butter, but they use highly refined flour and sugar, their food being cooked in a way to destroy the vitamins and mineral salts. I am increasingly convinced that trachoma will be proved to be one of the major deficiency diseases and is far less infectious than I once thought it to be.

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[1] Fox, L. W.: Arch. Ophth. 53: 166-171 (March) 1924.

Dr. I. Z. Stalberg, Atlantic City, N. J.: I feel that I should apologize because I am not an ophthalmologist, but I believe that seven years' experience in the United States Indian Service gives me the privilege of speaking a few words. I hope Dr. Fox, my old teacher, will forgive me that I cannot agree with him as to the title of his paper. That title might have been true twenty or twenty-five years ago when the Indians were a body of people unto themselves, and when they lived on reservations where there were very few white people except those employed in the service who came in contact with them. But at present this title, "The Trachoma Problem Among the North American Indians," does not hold true. With the opening up of the Indian reservations, and the white people coming in, with the Indians marrying whites and going to the various parts of the country, I feel that the trachoma problem is definitely a problem of the entire North American people. We all agree as to the contagiousness of trachoma and the seriousness of the problem. In 1910, when Dr. Fox mentioned that the first $12,000 was appropriated for relief of trachoma among Indians, I was connected with the service, and I visited the Cheyenne reservation in South Dakota and pointed out some of the problems with which we had to contend. Dr. Fox's recommendations are excellent, but I do not think that the Indian Bureau can solve the trachoma problem among the Indians. Fifteen years ago I started there, and my experience among 50,000 Indians is that 50 per cent. of them have trachoma. I have not been on a reservation for seven years, but Dr. Fox's statistics show the present situation, which I feel is as serious as, if not more so than, it was eight years ago. The Indian service has failed to solve the problem in fifty years. How will they solve it in the next fifteen years with more trachoma than ever? My suggestion is that the United States Public Health Service take over the trachoma problem and with its vigorous methods of attacking contagious and infectious diseases, they will go after this problem in such a way that in a year or two, or at most in ten years, they will solve the trachoma problem in the United States.

Dr. W. H. Wilder, Chicago: The Board of Trustees of the American Medical Association suggested to the Department of the Interior the appointment of an advisory committee to confer with the Commissioner on Indian Affairs in regard to the subject of the prevention of trachoma among the Indians, and the board appointed on that committee Dr. W. C. Posey, Dr. Arnold Knapp and myself.

In outlining the suggestions for attacking this problem we felt that one of the most important things we could urge was not only the prevention of the disease among the Indians who had not already acquired it, but also the prevention in the population adjacent to the Indian reservations, because we learned that down in the Oklahoma country among the white population contiguous to the so-called five civilized Indian tribes there is almost as much trachoma now as among the Indians themselves. As Dr. Stalberg has mentioned, the problem is not alone one of trachoma among the Indians, but a still greater one in that there is this distinct menace to the surrounding population. A careful inspection and survey should be made of all these wards of the government, and with such power as the Department of the Interior has, we think that such a survey should be made not only very instructive, but very beneficial. In such a survey the cases could be separated —those that were necessary for hospitalization could be so designated and in those cases that could be treated as ambulant the patients could be enjoined to appear at regular intervals at the hospital for treatment. While it is extremely important to attack those cases that now exist by the best means at hand, still we stress the important matter of disseminating a knowledge of trachoma among the Indians. We believe the Indians are intelligent enough to help disseminate such knowledge, and we urge that when clinics are established that tracts be distributed by every physician, not only to the mothers, but to the people in meeting houses, churches and schools, and that the nurses and physicians be constantly urging the prevention of the disease by simple personal cleanliness, which we think can be taught in spite of what Dr. Fox has said.

Dr. L. Webster Fox, Philadelphia: I am highly gratified to have the privilege of hearing and of discussing this most comprehensive paper. Frequently, ophthalmologists fail to understand that trachoma must be treated vigorously and that first of all the patient must be rendered inert so far as contagion is concerned. It has been shown why the disease persists—a valuable point in any treatment. Blepharophimosis unquestionably is the one greatest cause of its persistence. But the influence of specific invasion of the lacrimonasal canal by the trachomatous process is far from being proved in my experience. True, there is always more or less of an extension by continuity of structure of every inflammatory process of the conjunctiva and nasal mucous membrane, but further than this we have had no observation. The failure of most trachoma operations is usually due to poor judgment on the part of the surgeon as to when and what operation he should perform, and whether he should perform any. As a rule, we are not frank enough with ourselves in this regard. Discussions of this and other points of the treatment, however, are a healthy sign and beneficial to all, especially the patient. The greatest scourge of any person or people is inertia. The freezing by means of carbon dioxid snow, galvanocautery, roentgen-ray and similar treatments in my experience has been comparatively limited. In the radical treatment I am especially well pleased to note the endorsement of Burow's operation—the slitting of the tarsal cartilage. This simple operation is not done sufficiently often, nor has it received appropriate attention in this connection. The section of the cartilage, after the method of Kuhnt-Heisrath, is by far the best operation in the old cicatricial cases, and this I likewise supplement in many cases with canthotomy. However, I do find it wise in many cases to make a few galvanocautery punctures of the dermal lid margins in order to anticipate any entropin that might follow. In the more acute cases I prefer the procedure known as grattage; that is, the scarifying by a three bladed scapel and the violent brushing with a strong solution of mercuric chlorid. The roller forceps operation, while of value, is not to be compared to grattage. The peritomy operation has my approval in cases of pannus, and the operation with the galvanocautery is a very beneficial procedure.

Dr. J. M. Patton, Omaha: We are indebted to Dr. Ziegler for this practical review of the operative situation. I am glad that he emphasized the importance of paying especial attention to the lacrimal drainage. Occasionally we find an empyema of the canaliculus, and all know the harm that can follow an active infection in this region. I want particularly to express my appreciation of the work that Dr. Fox is doing in increasing the efficiency on the care of trachomatous Indians. Contrary to the opinion of some of our Eastern friends, the Indian does not walk the streets of Omaha in his primitive state, but we still see a good many of them who are afflicted with trachoma. Dr. Fox has spoken of the apparent irresponsibility of these Indian patients. They will come to us promising that they will stay as long as they need to, but about the third day they will say, "Going home," and they go. One agent has settled this situation to a certain extent by furnishing the patient with only enough money to reach Omaha. When we wire the agent that the patient is able to go, he sends the money for hospital and traveling expenses. Consequently we have been able to get some results in these cases. We have found the agency physicians and nurses very willing to cooperate in the follow-up of these cases. As has been said here, unless these cases are followed up they are liable to have recurrences, no matter how skilfully we may carry out our procedures at the time we see them. I feel that we as ophthalmologists can be of a great deal of help to these physicians and nurses, we who are adjacent to the agencies, in their endeavors to take care of their clientele. I heartily agree with Dr. Stalberg that this is not an Indian question alone, but very intimately affects his white neighbor; and, if we are to control trachoma, the Indian must be given very careful consideration.

Dr. G. W. Walker, Fresno, Calif.: One thing that has impressed me is that we do not seem to have any trachoma in the San Joaquin Valley of California except that which comes from elsewhere. I have seen trachoma there in families who had brought it from other parts of the world, living in most unhygienic surroundings, but no children reared in those families in California contracted the disease. We have trachoma brought there by the Armenians and by people from east of the Rocky Mountains, from the Mediterranean region, from Russia and Prussia and other places. Many cases sent to me as trachoma prove, on examination, to be simply folliculosis. My experience with the Indians is limited. We have a few Digger Indians, but I do not recall any trachoma. I have had no experience with southern California Indians. South of the Tehachapi Mountains is a very different part of the country from ours, and the Indians there are of a different tribe.

Dr. D. D. McHenry, Oklahoma City: I have been practicing medicine for twenty years in Oklahoma, treating much trachoma among Indians and some little among the whites. I appreciate what Dr. Fox has been doing among these Northwest Indians, and I sincerely hope that a sufficient appropriation is allowed so that a large enough salary to attract a good man will be available. The first man who came to Oklahoma had a salary of $1,500 a year. What sort of man could one expect for that price? We are seeing some of the results of his work yet. Many a time follicular conjunctivities is mistaken for trachoma. This man reported that 40 per cent. of the white children in the schools of one of our cities had trachoma, but most of these cases, when examined by men of experience, were found to be follicular conjunctivitis and not trachoma. That report has been sent everywhere, and I want to deny it. There is very little trachoma among the white people in Oklahoma. As far as surgery is concerned, I go further than Dr. Ziegler. We must get the trachoma bodies in the conjunctiva and in the caruncle. If we do not, we shall not get results. I think we can do more in thirty minutes with surgery in trachoma than in a year with drugs. After removal of the trachoma body by grattage and expression we scrub the lids with 1:500 mercuric chlorid, and we have not found a case of trachoma we could not cure. However, one operation will not cure it. One can remove all the trachoma bodies of any size, and probably destroy most of the infection, but there will be some few bodies too small to see which must be watched for at least a year, and these new trachoma bodies destroyed as they appear.

Dr. Stewart B. Muncaster, Washington, D. C.: In 1889 I went to Egypt to study trachoma from the standpoint of surgery, and also the regular treatment. I found that the patients in clinics away down in Cairo, as well as in Palestine and Syria, remained very much better and got well much more quickly by the surgical operation. They treated them with the various kinds of general treatments, such as blue stone, but the only treatment that got results, and quickly, was surgical treatment. I am still of the opinion that surgery is the only thing in the way of treating trachoma. A patient was brought to me about two years ago from the naval dispensary, who had been treated out west by various kinds of remedies. This girl was 22 years of age, and when she came into the office she was able to read only the large letters: 20/200 vision in one eye and 10/200 in the other. I told the navy surgeon that an operation was necessary and he asked me to do it. We put her in the hospital and operated, with first grattage of the lids and a canthus operation on both eyes, and then used forceps and put on ointment of mercuric chlorid and cold dressings, and she was out of the hospital in less than three weeks, a perfect cure. She went out west and married, and came back about six months ago saying she had never had any trouble since that operation, and her eyes are perfect.

Dr. E. E. Holt, Portland, Maine: With an iodin vaporizer I am able to drive the vapor of iodin through the lids of the eye and adjacent parts. I then use the high frequency current. Then I invert the lids and apply some preparation of the ductless glands, usually the powdered protonuclein, by a special powder blower made by myself because I never could find one suitable for the purpose. I blow the powder into the tissues of the inverted lids, retrotarsal folds and the inner canthus. If the lacrimal sac is involved, I syringe this out with a solution of the protonuclein powder. With this treatment I am able to cure trachoma with little or no operative intervention.

Dr. L. Webster Fox, Philadelphia: This subject has been near to my heart for twenty-five years, ever since I had the Indian children under me at Carlisle, and my students who have gone out have followed the two operations—the grattage or tarsectomy as performed by Dana. I went to Paris to get him to show me how to do it. I deemed this operation preferable to the others proposed and practiced.

Dr. S. Lewis Ziegler, Philadelphia: The question of surgery in trachoma is so simple and sane that I do not see why any one should consider it such a terrible proposition. All that I have outlined in my paper can be done inside of from twenty to twenty-five minutes. Rapid dilation is not difficult for any one who can pass a lacrimal dilator, since the technic is exactly the same. If there is a tear-soaked conjunctiva, and one performs rapid dilation, the disturbance will quickly disappear. I always dilate all of my enucleation patients in order to prevent the lacrimal discharge that so frequently accompanies the wearing of a glass eye. In the folliculosis of which Dr. Stucky spoke, the application of carbon dioxid snow will bring relief as quickly as anything that I could recommend. In trachoma there is nothing to compare with its efficiency if there are broad granulations; but if there are rough cicatricial elevations, one should use a cautery point to melt them down. I prefer Knapp's roller operation to grattage, as the former is less destructive to the conjunctiva. The silver stick is not as effective as freezing with a pencil of carbon dioxid. In regard to the dryness of xerosis, naturally one does not have to stretch the tear duct in such a case because these tissues are already atrophic. It is to prevent the disease from reaching that stage that we dilate the tear duct. Dr. Stucky's clientele of "mountain whites" certainly require good food, because they are undernourished; but the Indian does not need that as a rule. He requires a more specific type of treatment, and more radical surgery, since he is usually careless about his after-treatment. There is no reason why every case of trachoma should not be entirely cured, and that is a statement that we should emphasize; in other words, we should stop saying that trachoma is incurable.

MATERNAL MORTALITY IN MASSACHUSETTS

A STUDY OF NINE HUNDRED AND EIGHTY-FOUR DEATHS IN THE PUERPERAL STATE [*]

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This paper is intended to give the results of a study of all the deaths occurring in Massachusetts during the years 1922 and 1923 among women six months or more pregnant, from causes immediately related to pregnancy or childbirth, or from causes in which pregnancy or childbirth was a controlling factor. Certain facts should be emphasized at the beginning.

1. This paper is not intended as a general discussion of mortality in the puerperal state, though it is hoped that the facts presented will be useful as a source of information on which such a discussion could be based in part.

2. No attempt is made to compute mortality rates from these figures. They are not complete, since deaths of women dying before the sixth month of gestation are not included and since deaths occurring after one month post partum are excluded. It was found impos-

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[*] From the Division of Hygiene, Massachusetts Department of Public Health.

[*] This is only a preliminary study and certain other more intensive studies are in progress, based on the material used here. These studies will include topics such as septicemia and toxemia, primiparas and operative delivery other than cesarean section. Certain other partial studies already have been completed and published in the Commonhealth, the quarterly magazine of the Massachusetts Department of Public Health. These have included "Statistical Study of One Hundred Cesarean Sections"; "One Hundred Sudden Deaths," and "Review of Maternal Mortality in Massachusetts in 1922."

sible to approach accuracy with respect to the deaths occurring early in pregnancy; hence, the exclusion of such deaths from our figures.

3. The figures are not comparable to the official figures published by the state registrar of vital statistics who, of necessity, is confined to the returns given on the death certificates. Our figures are based on an intensive study of the facts gained not only from the death certificates but also from personal conferences with the attending physicians and hospital authorities, and in some cases, with members of the deceased person's family. On the other hand, the registrar's figures contain some deaths which ours do not; namely, those occurring in the early months of gestation.

4. Deaths occurring during the puerperal state from certain complications, such as heart disease, acute infections and a miscellaneous group, are included in our figures. They would not be included in similar figures compiled in England and Wales. It seemed fair, however, to include them in this case, since undoubtedly the existence of the pregnancy was a deciding factor in the causation of death. We have clearly indicated, nevertheless, in the appropriate place, the number of such deaths due to complications, so that the reader can see for himself the relation they bear to the whole number of deaths and may make such allowances therefor as he may wish.

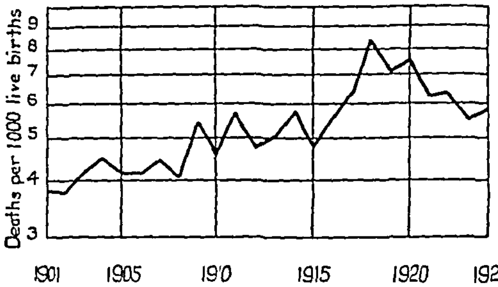

Chart 1.—Maternal mortality in Massachusetts.

5. In approximately 10 per cent. of the cases, our final diagnosis represents a deviation from that given as the primary cause of death on the death certificate. This change in diagnosis is based on the information obtained from the attending physician and the hospital, and a careful study of the whole record.

The method of study was as follows: The work outside the city of Boston was carried on by three physicians on the staff of the Division of Hygiene of the Massachusetts Department of Public Health. The records of deaths occurring in Massachusetts for the years 1922 and 1923 were supplied them by the registrar of vital statistics, together with the facts recorded on the death certificates, as signed by the attending physicians. The deaths occurring in the city of Boston (277) were investigated by the Boston Health Department, which has kindly allowed us to incorporate its results into the general state figures. In this state-wide study only those deaths were included which occurred in women six months or more pregnant, and those which occurred within one month after delivery. It was found necessary to reject certain others as well; namely, cases in which the cause of death bore no particular relationship to pregnancy or childbirth, such as automobile accidents and multiple burns.

The physicians making the study, having the information given by the death certificates in their possession, visited all those who had any special knowledge concerning the cases. This would include, first of all, the attending physician, and then the hospital, if the patient had been delivered or died at the hospital; and in certain instances, visits were made to the homes to get information regarding the social condition of the family in which the death occurred.

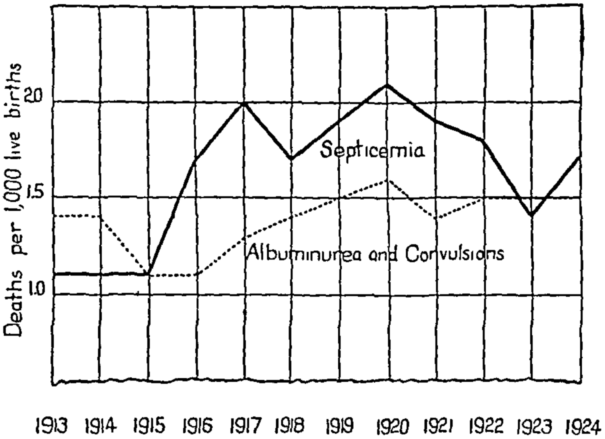

Chart 2.—Causes of maternal mortality in Massachusetts.

Some of the deaths were located not through maternal death certificates but as incident to a study of infant deaths.

This statement of our method of study, and difficulties in relation thereto, brings us to the need of defining clearly what we mean by the terms which we are using in this paper.

(*a*) Deaths in the puerperal state: A death occurring in the case of a woman six months or more pregnant from some cause directly related to or seriously influenced by pregnancy or childbirth. This does not, of course, include all the deaths in the puerperal state which might have been found had we included those under six months' gestation.

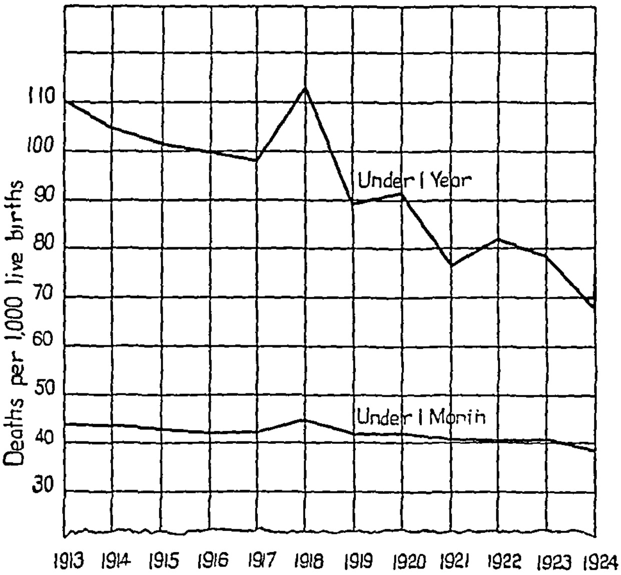

Chart 3.—Infant mortality in Massachusetts.

(*b*) Stillbirth: Babies born dead at or after six months' gestation.

(*c*) Premature birth: All babies born alive before full term.

ilies in California contracted the disease. We have trachoma
brought there by the Armenians and by people from east of
the Rocky Mountains, from the Mediterranean region, fr
Russia and Prussia and other places. Many cases sent t
as trachoma prove, on examination, to be simply foll
My experience with the Indians is limited. We h
Digger Indians, but I do not recall any trachoma.
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Tehachapi Mountains is a very different pa ame
from ours, and the Indians there are of ing

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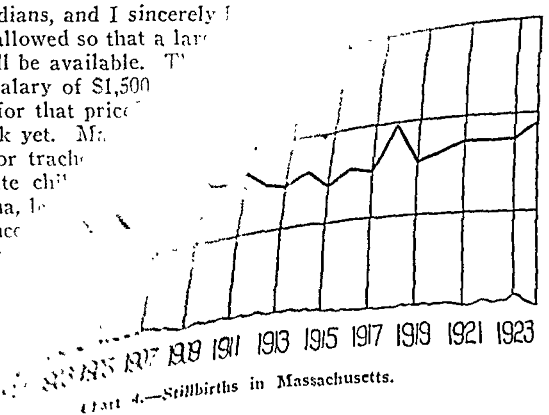

Chart 4.—Stillbirths in Massachusetts.

…ween these two terms, since many causes which theoretically are preventable often are not practically so, under ordinary circumstances. We, however, are arbitrarily including under the term potentially preventable the following: toxemia; puerperal infection; communicable diseases, such as scarlet fever; neglected hemorrhage at any time during pregnancy or following delivery.

Table 1.—*Weekly Income*

Weekly Income	Total
	285
•	625
Unknown	74
Total	984

• $30 up, fair or good.

Table 2.—*Mothers Employed Outside Their Homes*

1922	38
1923	20
Total	58

The mortality is not highest among the poorest but among mothers of moderate means. These are often the ones who get little nursing or hospital care. They feel that they cannot afford it and also are frequently ignorant of what they need.

Table 3.—*Occupation of Husband*

Clerical	87
Labor, unskilled	212
Labor, skilled	406
Professional	38
Selling	100
Army and navy	7
Student	10
Unemployed	4
Unknown	120
Total	984

Table 4.—*Number and Place of Delivery of Single Mothers*

Year	Home	Hospital	Total
[illegible]	1	10	11
[illegible]	5	17	22
Total	6	27	33

Table 5.—*Deaths Arranged According to Birthplace of Patient's Mother*

America (colored, 14)	264	Albania	4
Ireland	198	Norway	4
Canada	152	Newfoundland	3
Italy	74	Armenia	3
Russia	46	Denmark	3
England	32	Belgium	2
Portugal	27	Syria	2
Poland	26	Holland	2
France	25	Austria	2
Scotland	20	West Indies	2
Sweden	16	Cape Verde Islands	1
Germany	10	Switzerland	1
Greece	8	Spain	1
Lithuania	6	Turkey	1
Finland	6	Unknown	43
Total			984

Table 6.—*Deaths According to Birthplace of Patient*

United States	584	West Indies	3
Canada	95	South America	3
Ireland	79	Norway	3
Italy	63	Belgium	2
Russia	32	Syria	2
Poland	23	Austria	2
Portugal	17	Denmark	2
England	14	Armenia	2
Scotland	10	Holland	2
Sweden	8	Turkey	1
Greece	8	Switzerland	1
Lithuania	7	Spain	1
Newfoundland	5	France	1
Finland	4	Mexico	1
Germany	4	Unknown	1
Albania	4		
Total			984

Table 7.—*Midwives*

Year	Number Mentioned
1922	14
1923	8

Midwives evidently did not play an important part in this series of deaths.

Table 8.—*Month of Pregnancy and Cause of Death*

	Months of Pregnancy					
Cause of Death	6 Mo.	7 Mo.	8 Mo.	9 Mo.	Unknown	Total
Puerperal infection	9	11	9	190	4	223
Toxemia	17	43	36	113	8	217
Acute infections	12	26	21	77	4	140
Hemorrhage	9	15	25	75	5	129
Embolism	3	7	7	80	..	97
Heart disease	5	5	7	30	2	49
Shock	..	..	..	35	1	36
Nephritis	4	8	4	8	2	26
Acute dilatation of heart	..	1	4	14	..	19
Intestinal obstruction	1	3	..	10	..	14
Ruptured uterus	2	1	..	6	..	9
All others	8	..	..	17	..	25
Totals	70	120	113	655	26	984

Table 9.—*Acute Infections Included*

Pneumonia	112
Tuberculosis	16
Scarlet fever	6
Erysipelas	2
Streptococcus infection (extra-uterine)	1
Septic sore throat	1
Septic hand	1
Diphtheria	1
Total	140

Hemorrhages in sixty-seven cases were antepartum and in sixty-two were postpartum. Thirty-nine patients were known to have had heart disease during pregnancy; eight were not known to have had heart disease during pregnancy; in two cases it could not be ascertained from the history.

Table 10.—*Age and Number of Pregnancies*

Number of Pregnancies	Age Under 20	20-24	25-29	30-34	35-39	40+	Unknown	Total
1	33	120	105	62	39	9	2	370
2	7	29	46	49	25	3	..	159
3	1	12	27	37	26	11	1	115
4	1	7	14	27	27	9	1	86
5	..	..	12	22	16	9	..	59
6	..	..	9	25	14	9	..	57
7	..	..	1	10	14	12	1	38
8	..	..	..	5	9	10	..	24
9	..	..	1	3	9	2	..	15
10	..	..	..	1	8	5	..	14
11	..	..	..	2	7	5	..	14
12	..	..	..	..	5	3	1	9
13	..	..	..	1	2	2	1	6
14	..	..	..	1	1	1	..	3
15	..	..	..	..	1	1	..	2
16	..	..	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..
19	..	..	..	..	..	1	..	1
20	..	..	..	..	..	1	..	1
Unknown	..	1	2	4	4	..	..	11
Totals	42	169	217	249	207	93	7	984

These mothers died in the prime of life when their growing families had the greatest need of them.

Table 11.—*Fate of Baby*

Undelivered	53
Living	505
Stillborn	289
Died under 1 month	116
Died at 1 month or over	25
Unknown	15
Total	1,003

Nineteen pairs of twins.

Of the 1,003 babies who were born to the 984 mothers, 289 were stillborn and 141 died early, a total loss of 430 infants which, added to our maternal deaths, makes a total loss of life in connection with pregnancy and childbirth, of 1,414 (Tables 10 and 11).

Table 12.—*Place and Method of Delivery*

	Spontaneous	Operative	Unknown	Total
Delivered in hospital:				
Emergency	61	234	2	297
Routine	79	224	..	303
Unknown	2	2	1	5
Total	142	460	3	605
Delivered at home, but died in hospital	55	25	4	84
Delivered and died at home	130	107	5	242
Totals	327	592	12	931
No delivery *	...	...	..	53
Totals	327	592	12	984

* Thirty-four of these patients died in a hospital.

One noticeable fact in connection with delivery is the large number of mothers known to have been delivered in hospitals (Table 12), nearly two thirds, all told (615). Over half of these mothers (349) were emergency hospital cases rushed in, for the most part, after serious complications had arisen, so that the apparently high mortality of those having hospital delivery is easily comprehended.

Table 13.—*Reason for Sending Patient to Hospital After Delivery at Home*

Puerperal infection	48
Convulsions	6
Pneumonia	5
Hemorrhage	5
Ruptured uterus	3
Uremic coma	2
Psychosis	2
Pelvic abscess	2
Twisted pedicle, cyst of ovary	1
Anemia	1
Inversion of uterus	1
Influenza	1
Scarlet fever	1
Heart disease	1
Toxemia	1
Traumatic ileus	1
Tuberculous peritonitis	1
Gangrene of leg	1
Precipitate delivery on way to hospital	1
Total	84

Table 14.—*Cause of Death and Method of Delivery of the Two Hundred and Forty-Two Patients Who Were Delivered and Died at Home*

	Spontaneous	Operative	Unknown	Total
Puerperal infection	19	18	2	39
Toxemia	11	19	1	31
Acute infections	44	12	..	56
Hemorrhage	15	20	..	35
Embolism	24	9	..	33
Heart disease	7	7	1	15
Shock	..	13	..	13
Nephritis	4	..	1	5
Acute dilatation of heart	1	3	..	4
Ruptured uterus	..	3	..	3
All others	5	3	..	8
Totals	130	107	5	242

Table 15.—*Cause of Death and Method of Delivery*

Cause of Death	Spontaneous	Forceps, Low	Forceps, Middle	Forceps, High	Version	Version and Forceps	Cesarean Section	Other Operative Procedure	No Delivery	Unknown	Total
Puerperal infection	87	15	9	25	15	5	53	9	..	5	223
Toxemia	48	11	11	22	34	3	54	6	24	4	217
Acute infections	85	12	2	8	6	1	13	6	7	..	140
Hemorrhage	25	5	5	9	40	10	18	10	6	1	129
Embolism	43	10	6	8	5	1	16	3	5	..	97
Heart disease	17	5	..	4	4	1	7	5	5	1	49
Shock	1	2	..	10	6	9	5	2	1	..	36
Nephritis	8	..	..	2	2	..	7	3	3	1	26
Acute dilatation heart	3	3	1	1	..	..	10	1	..	..	19
Intestinal obstruction	..	..	..	..	..	1	13	..	..	..	14
Ruptured uterus	..	1	..	3	1	1	2	1	..	..	9
All others	10	1	..	..	2	1	6	3	2	..	25
Totals	327	65	34	92	115	33	204	49	53	12	984

Of the 984 cases, 592 were associated with operative intervention.

(*d*) Puerperal infection: The following diagnoses: septicemia, peritonitis, salpingitis, septic endometritis, streptococcus infection, pyemia, phlebitis.

(*e*) Toxemia: The following terms appearing on death certificates: eclampsia, toxic vomiting of pregnancy, acute yellow atrophy of the liver in pregnancy, uremia, convulsive toxemia of pregnancy.

(*f*) Hemorrhage: Placenta praevia, premature separation of placenta, uterine bleeding, bleeding throughout pregnancy, postpartum hemorrhage.

(*g*) Preventable and nonpreventable: It is, of course, impossible to draw a hard and fast distinction between these two terms, since many causes which theoretically are preventable often are not practically so, under ordinary circumstances. We, however, are arbitrarily including under the term potentially preventable the following: toxemia; puerperal infection; communicable diseases, such as scarlet fever; neglected hemorrhage at any time during pregnancy or following delivery.

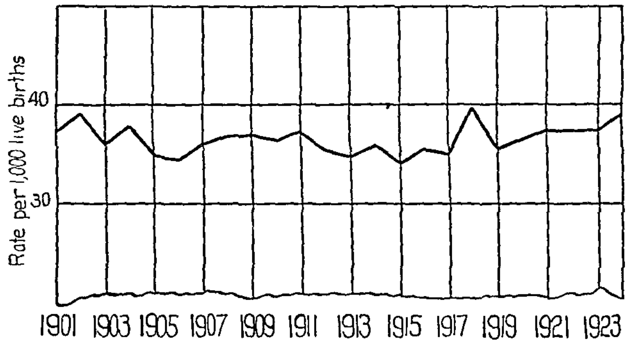

Chart 4.—Stillbirths in Massachusetts.

Table 1.—*Weekly Income*

Weekly Income	Total
Low	285
Fair or good*	625
Unknown	74
Total	984

* $30 up, fair or good.

Table 2.—*Mothers Employed Outside Their Homes*

1922	38
1923	20
Total	58

The mortality is not highest among the poorest but among mothers of moderate means. These are often the ones who get little nursing or hospital care. They feel that they cannot afford it and also are frequently ignorant of what they need.

Table 3.—*Occupation of Husband*

Clerical	87
Labor, unskilled	212
Labor, skilled	406
Professional	38
Selling	100
Army and navy	7
Student	10
Unemployed	4
Unknown	120
Total	984

Table 4.—*Number and Place of Delivery of Single Mothers*

Year	Home	Hospital	Total
1922	1	10	11
1923	5	17	22
Total	6	27	33

Table 5.—*Deaths Arranged According to Birthplace of Patient's Mother*

America (colored, 14)	264	Albania	4
Ireland	198	Norway	4
Canada	152	Newfoundland	3
Italy	74	Armenia	3
Russia	46	Denmark	3
England	32	Belgium	2
Portugal	27	Syria	2
Poland	26	Holland	2
France	25	Austria	2
Scotland	20	West Indies	2
Sweden	16	Cape Verde Islands	1
Germany	10	Switzerland	1
Greece	8	Spain	1
Lithuania	6	Turkey	1
Finland	6	Unknown	43
Total			984

Table 6.—*Deaths According to Birthplace of Patient*

United States	584	West Indies	3
Canada	95	South America	3
Ireland	79	Norway	3
Italy	63	Belgium	2
Russia	32	Syria	2
Poland	23	Austria	2
Portugal	17	Denmark	2
England	14	Armenia	2
Scotland	10	Holland	2
Sweden	8	Turkey	1
Greece	8	Switzerland	1
Lithuania	7	Spain	1
Newfoundland	5	France	1
Finland	4	Mexico	1
Germany	4	Unknown	1
Albania	4		
Total			984

Table 7.—*Midwives*

Year	Number Mentioned
1922	14
1923	8

Midwives evidently did not play an important part in this series of deaths.

Table 8.—*Month of Pregnancy and Cause of Death*

	Months of Pregnancy					
Cause of Death	6 Mo.	7 Mo.	8 Mo.	9 Mo.	Unknown	Total
Puerperal infection	9	11	9	190	4	223
Toxemia	17	43	36	113	8	217
Acute infections	12	26	21	77	4	140
Hemorrhage	9	15	25	75	5	129
Embolism	3	7	7	80	..	97
Heart disease	5	5	7	30	2	49
Shock	..	..	..	35	1	36
Nephritis	4	8	4	8	2	26
Acute dilatation of heart	..	1	4	14	..	19
Intestinal obstruction	1	3	..	10	..	14
Ruptured uterus	2	1	..	6	..	9
All others	8	..	..	17	..	25
Totals	70	120	113	655	26	984

Table 9.—*Acute Infections Included*

Pneumonia	112
Tuberculosis	16
Scarlet fever	6
Erysipelas	2
Streptococcus infection (extra-uterine)	1
Septic sore throat	1
Septic hand	1
Diphtheria	1
Total	140

Hemorrhages in sixty-seven cases were antepartum and in sixty-two were postpartum. Thirty-nine patients were known to have had heart disease during pregnancy; eight were not known to have had heart disease during pregnancy; in two cases it could not be ascertained from the history.

Table 10.—*Age and Number of Pregnancies*

Number of Pregnancies	Age Under 20	20-24	25-29	30-34	35-39	40+	Unknown	Total
1	33	120	105	62	39	9	2	370
2	7	29	46	49	25	3	..	159
3	1	12	27	37	26	11	1	115
4	1	7	14	27	27	9	1	86
5	..	..	12	22	16	9	..	59
6	..	..	9	25	14	9	..	57
7	..	..	1	10	14	12	1	38
8	..	..	..	5	9	10	..	24
9	..	..	1	3	9	2	..	15
10	..	..	..	1	8	5	..	14
11	..	..	..	2	7	5	..	14
12	..	..	..	..	5	3	1	9
13	..	..	..	1	2	2	1	6
14	..	..	..	1	1	1	..	3
15	..	..	..	..	1	1	..	2
16	..	..	..	..	..	..	..	..
17	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..
19	..	..	..	..	..	1	..	1
20	..	..	..	..	..	1	..	1
Unknown	..	1	2	4	4	..	..	11
Totals	42	169	217	249	207	93	7	984

These mothers died in the prime of life when their growing families had the greatest need of them.

Table 11.—*Fate of Baby*

Undelivered	53
Living	505
Stillborn	289
Died under 1 month	116
Died at 1 month or over	25
Unknown	15
Total	1,003

Nineteen pairs of twins.

Of the 1,003 babies who were born to the 984 mothers, 289 were stillborn and 141 died early, a total loss of 430 infants which, added to our maternal deaths, makes a total loss of life in connection with pregnancy and childbirth, of 1,414 (Tables 10 and 11).

Table 12.—*Place and Method of Delivery*

	Spontaneous	Operative	Unknown	Total
Delivered in hospital:				
Emergency	61	234	2	297
Routine	79	224	..	303
Unknown	2	2	1	5
Total	142	460	3	605
Delivered at home, but died in hospital	55	25	4	84
Delivered and died at home	130	107	5	242
Totals	327	592	12	931
No delivery *	...	...	..	53
Totals	327	592	12	984

* Thirty-four of these patients died in a hospital.

One noticeable fact in connection with delivery is the large number of mothers known to have been delivered in hospitals (Table 12), nearly two thirds, all told (615). Over half of these mothers (349) were emergency hospital cases rushed in, for the most part, after serious complications had arisen, so that the apparently high mortality of those having hospital delivery is easily comprehended.

Table 13.—*Reason for Sending Patient to Hospital After Delivery at Home*

Puerperal infection	48
Convulsions	6
Pneumonia	5
Hemorrhage	5
Ruptured uterus	3
Uremic coma	2
Psychosis	2
Pelvic abscess	2
Twisted pedicle, cyst of ovary	1
Anemia	1
Inversion of uterus	1
Influenza	1
Scarlet fever	1
Heart disease	1
Toxemia	1
Traumatic ileus	1
Tuberculous peritonitis	1
Gangrene of leg	1
Precipitate delivery on way to hospital	1
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Table 14.—*Cause of Death and Method of Delivery of the Two Hundred and Forty-Two Patients Who Were Delivered and Died at Home*

	Spontaneous	Operative	Unknown	Total
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Acute infections	44	12	..	56
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Embolism	24	9	..	33
Heart disease	7	7	1	15
Shock	..	13	..	13
Nephritis	4	..	1	5
Acute dilatation of heart	1	3	..	4
Ruptured uterus	..	3	..	3
All others	5	3	..	8
Totals	130	107	5	242

Table 15.—*Cause of Death and Method of Delivery*

Cause of Death	Spontaneous	Forceps, Low	Forceps, Middle	Forceps, High	Version	Version and Forceps	Cesarean Section	Other Operative Procedure	No Delivery	Unknown	Total
Puerperal infection	87	15	9	25	15	5	53	9	..	5	223
Toxemia	48	11	11	22	34	3	54	6	24	4	217
Acute infections	85	12	2	8	6	1	13	6	7	..	140
Hemorrhage	25	5	5	9	40	10	18	10	6	1	129
Embolism	43	10	6	8	5	1	16	3	5	..	97
Heart disease	17	5	..	4	4	1	7	5	5	1	49
Shock	1	2	..	10	6	9	5	2	1	..	36
Nephritis	8	..	..	2	2	..	7	3	3	1	26
Acute dilatation heart	3	3	1	1	..	..	10	1	..	..	19
Intestinal obstruction	..	..	..	..	..	1	13	..	..	..	14
Ruptured uterus	..	1	..	3	1	1	2	1	..	..	9
All others	10	1	..	..	2	1	6	3	2	..	25
Totals	327	65	34	92	115	33	204	49	53	12	984

Of the 984 cases, 592 were associated with operative intervention.

TABLE 16.—*Cesarean Sections*

	Number	Per Cent.
Operation done as an emergency measure	133	65
Operation not an emergency	71	35
Totals	204	100

TABLE 17.—*Length of Time Mothers Lived After Delivery*

Died	Number
On day of delivery	280
During first week	642
During first two weeks	788
Before thirty-two days	984

Maternal mortality is highest during the first week after delivery, about two thirds of the deaths occurring during this time. (This may be compared with infant mortality, which is highest during the first week of life.) In the large group of "early" maternal deaths, nearly one half of the patients died the day of delivery.

TABLE 18.—*Necropsies and Cause of Death*

Puerperal infection	11
Toxemia	5
Hemorrhage	3
Heart disease	3
Intestinal obstruction	3
Embolism	3
Pneumonia	2
Scarlet fever	1
Syphilis	1
Nephritis	1
Ruptured lung	1
Surgical shock	1
Total	35

TABLE 19.—*Number of Living Children These Mothers Left*

Number of mothers	984
Number of children left by these mothers	2,156

Many homes were broken up by the mother's death. Obviously, the large group of motherless children stand handicapped in environment under these conditions, and add greatly to the serious and far-reaching consequences of maternal mortality.

TABLE 20.—*Prenatal Care: Number of Months and Type of Care*

	Type of Care				
Number of Months	Urinalysis	Blood Pressure	Vaginal or Rectal Examination	Pelvic Measurements	No Examinations
"Some prenatal care"	11	5	6	4	4
Less than 1 month	43	25	11	15	6
1 month	46	28	13	23	6
2 months	58	38	13	32	3
3 months	92	72	30	46	2
4 months	52	46	19	32	3
5 months	43	42	18	31	2
6 months	81	69	34	50	1
7 months	48	50	16	32	3
8 months	96	87	32	65	2
Totals	570	462	192	330	32

The standard used was the so-called "Grade A" care; that is, (1) monthly visits to clinic from fifth through ninth month of pregnancy, or supervision by private physician from fifth through ninth month; (2) monthly urinalysis from fifth through ninth month; (3) at least an abdominal examination; (4) pelvic measurements, if a primipara. In s series only 107, or 11 per cent., of the patients had received the ndard care.

TABLE 21.—*Cause of Death of Primiparas and Multiparas*

.Cause of Death	Primiparas	Multiparas	Unknown	Total
Puerperal infection	101	119	3	223
Toxemia	99	117	1	217
Acute infections	42	96	2	140
Hemorrhage	23	105	1	129
Embolism	41	56	..	97
Heart disease	15	32	2	49
Shock	14	21	1	36
Nephritis	8	18	..	26
Acute dilatation of heart	8	10	1	19
Intestinal obstruction	6	8	..	14
Ruptured uterus	..	9	..	9
All others	13	12	..	25
Totals	370	603	11	984

TABLE 22. - *Prenatal Care and Cause of Death*

	Prenatal Care												
Cause of Death	None	Some	Less than 1 Month	1 Month	2 Months	3 Months	4 Months	5 Months	6 Months	7 Months	8 Months	Unknown	Total
Puerperal infection	76	4	7	12	9	26	16	8	19	15	26	5	223
Toxemia	79	2	23	18	15	22	9	11	15	5	17	1	217
Acute infections	61	2	8	7	7	9	8	8	13	6	9	2	140
Hemorrhage	53	5	6	4	8	12	5	4	9	8	13	2	129
Embolism	24	1	1	2	11	8	7	6	14	10	12	1	97
Heart disease	14	1	2	2	5	8	2	1	2	4	6	2	49
Shock	12	..	1	1	2	6	3	..	3	..	7	1	36
Nephritis	9	2	3	2	1	1	1	..	1	4	1	1	26
Acute dilatation of heart	3	..	..	2	2	..	1	2	2	1	5	1	19
Intestinal obstruction	4	..	..	2	1	2	..	1	2	..	2	..	14
Ruptured uterus	3	..	..	2	..	1	2	..	..	1	..	..	9
All others	10	..	..	3	1	3	1	4	2	1	..	..	25
Totals	348	17	51	57	62	98	55	45	82	55	98	16	984

CONCLUSIONS TO BE DRAWN FROM THIS STUDY

From this study of almost 1,000 maternal deaths, certain conclusions may be drawn as to the quality of obstetric service, including prenatal care.

It must be quite evident that with such a large percentage of the deaths due to infection and toxemia, more intense medical service is needed. The part that prenatal care plays in the prevention of toxemia is sufficient evidence of this. Over 52 per cent of our cases had less than three months of so-called prenatal care. Moreover, we know that much that passes for prenatal care is unworthy of the name. Thirty-five per cent. had no prenatal care at all. If we accept the standards given by Woodbury of the Children's Bureau as constituting Grade A (Table 20) prenatal care, which involved adequate oversight from the fifth through the ninth month of pregnancy, then 89 per cent. of our cases did not have adequate prenatal care. Furthermore, it is obvious that even Grade A care is far from ideal, since supervision should begin at the earliest possible period of pregnancy.

When we turn to the handling of the confinement itself we find puerperal septicemia, a preventable disease, still sharing with toxemia, another preventable disease, the first place on the list of causes of death. With all the modern facilities, we should naturally expect to see a greater drop in deaths from all preventable causes. It is a matter for serious concern that such a drop is not to be seen even after making all reasonable allowance for better reporting and greater accuracy in diagnosis, as well as for changes in methods of reporting deaths. There is encouragement, however, in the fact that the death rate for septicemia, formerly on the upward trend, during the last three years has shown a downward tendency, as has the death rate from all diseases caused by pregnancy and confinement since the 1918 high peak caused by the influenza epidemic.

It may well be asked, What can public and private initiative do to remedy the shortcomings this study has emphasized? These data tell us only about the handling of the unsuccessful pregnancies; they do not give us the facts as to the successful pregnancies, so that we do not know exactly how to gage the relative importance of the methods employed in the successful cases.

There are, however, experiments which point the way to the answer. Various organizations in this country have had enough experience with prenatal care to be able to draw reasonable conclusions. The most striking effect has been on the neonatal mortality, which has been reduced as much as 50 per cent., apparently as the result of prenatal care. Reduction in the number of stillbirths has occurred in some instances, though this is a less constant result. The maternal mortality has also been noticeably less when adequate prenatal care has been given. Those interested in studying these facts will find material in the reports of the Maternity Center in New York; of the Association for Improving the Condition of the Poor, New York; of the Community Health Association of Boston, and of public and private clinics in many of the large cities of this country.

If this adequate prenatal care is to be given with its attendant saving of life, there must be cooperation to this end between physician and patient, since neither is wholly responsible for either success or failure. A further campaign of education as to the value of prenatal care seems to be indicated.

SUMMARY

Certain outstanding facts are evident from this study of 984 maternal deaths in Massachusetts:

1. Septicemia, toxemia and hemorrhage, causes of death which may be called generally preventable, were responsible for 58 per cent. of the deaths.
2. The part played by operative intervention with labor cannot be shown statistically from this series of cases, since records are not available as to the total number of operations performed with and without success. A clear impression was gained, however, by our physicians, during the course of this study, that many thoughtful general practitioners have come to the conclusion that this factor of operative intervention is of considerable importance in the total of unfavorable results, even after making allowance for the cases inevitably operative from the beginning. In 591 of our series of 984 cases, operative procedures figured.
3. Lack of adequate prenatal care was evident in 89 per cent. of the cases.
4. Poverty as a cause of maternal mortality did not stand out in this series of cases.
5. Twenty-five per cent. of the mothers who died were Americans; that is, their mothers were born in the United States. This factor counts for little, however, since we do not know the racial distribution of all pregnancies in the years in question.

Atypical Temperament.—In my experience abnormal disposition is the most frequent, as also the most subtle, sign of a nervous constitution. It includes not the strong and good traits of the make-up of the individual, which count toward his efficiency as a personal and as a social unit, but the weak points of his armor for the battle of life, points, moreover, which are sufficiently marked to count as distinct traits or characteristics of his personality. The strong and the weak points are often combined in the faddists, cranks and fanatics of society, and in others with minor mental twists. Abnormal disposition shows itself in very many forms.—Easterbrook, C. C.: Mental Invalids, London, Oliver and Boyd, 1925.

PROTEIN AS AN ADJUNCT IN THE TREATMENT OF RESISTANT SYPHILIS *

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There are patients with syphilis who show only a slight reduction in the Wassermann reaction under the usual drug therapy. As the Wassermann test is considered the most important criterion of the benefit of treatment in latent and inactive syphilis, this type of patient is classified as resistant or Wassermann-fast. The serologic reaction, however, must not be taken as the *only* test of cure.

An analysis was made during the World War of a series of patients who had been given the routine treatment of neo-arsphenamin intravenously and mercurial oil intramuscularly. The patients were adult males in the same age period, with similar conditions of life, and would seem to be a particularly good control group, since they received regular and routine series of injections. As indicated in Table 1, the best results were had in the class diagnosed early by a positive dark field while the Wassermann test was still negative. Seventeen had a second negative Wassermann reaction one month after the first course, and two had a plus-minus reaction. The late primary and early secondary syphilitic patients in whom the Wassermann test was positive before treatment had thirty-four positive and forty-one negative reactions one month after the first course. There were twenty-three patients presenting a latent or inactive form of the disease; in eighteen, a definite history could be obtained with an average duration of five and one-third years. There were four negative reactions and nineteen positive reactions after one course. Nine were still slightly positive after three courses and are therefore of the resistant type, and similar to the cases now under consideration. Kyrle[1] has emphasized the value of combined protein and antisyphilitic drug medication. Greenbaum and Wright[2] have reported a favorable influence on the course of syphilis by the intramuscular injection of milk protein, with marked clinical improvement under this treatment alone. The injections were made at intervals of two or three days, and a series of six or more treatments were given before the beginning of drug therapy.

TABLE 1.—*Comparison of Wassermann Reaction in Different Stages of Syphilis with Similar Treatment*

Type of Syphilitic Infection	Reaction After First Course	Reaction After Second Course	Reaction After Third Course
Early primary; Wassermann reaction negative; dark field positive	2 positive, 17 negative	1 positive, 18 negative	0 positive, 19 negative
Late primary and early secondary; Wassermann reaction positive	34 positive, 41 negative	9 positive, 66 negative	5 positive, 70 negative
Tertiary; Wassermann reaction positive	19 positive, 4 negative	13 positive, 10 negative	9 positive, 14 negative

The use of protein in the present series of patients with latent syphilis has been preceded by three courses of neo-arsphenamin intravenously, mercuric chlorid intramuscularly and potassium iodid by mouth. The neo-arsphenamin was given twice a week until eight injections were made and then followed by from twelve to eighteen intramuscular injections of 1 grain (0.06 gm.) of mercuric chlorid at intervals of three and four days. The patients with no appreciable change in the Wassermann reaction after three courses were therefore Wassermann-fast, and were given protein therapy.

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* From the John McCormick Institute for Infectious Diseases.

[1] Kyrle, J.: Fieber ein wesentlicher Heilfactor in der Syphilistherapie, Wien klin. Wchnschr. **30**: 707-712 (June 1) 1917.

[2] Greenbaum, S. S., and Wright, C. S.: Effects of Nonspecific Protein Therapy in Syphilis, Arch. Dermat. & Syph. **10**: 551-556 (Nov.) 1924.

TABLE 2.—*Wassermann Readings Before and After the Use of Protein*

Case	Duration of Infection	Stage of Syphilis	Wassermann Reaction Before Treatment	Wassermann Reaction After One Course	Wassermann Reaction After Two Courses	Wassermann Reaction After Three Courses	Wassermann Reaction One Month After Course with Protein	Wassermann Reaction Seven Months After Course with Protein
1	18 yr.	Tertiary	4+	4+	4+	4+	±	0
2	8 mo.	Late secondary	4+	4+	4+	2+	0	0
3	Unknown	Tertiary	4+	4+	4+	4+	0	0
4	10 yr.	Tertiary	4+	4+	4+	4+	0	..
5	15 yr.	Tertiary	4+	4+	4+	4+	2+	..
6	7 yr.	Tertiary	4+	...	...	4+	0	0
7	6 yr.	Tertiary	4+	...	...	4+	+	..
8	8 yr.	Tertiary	4+	...	...	2+	0	..

One lot of gonococcus protein was used throughout these observations. It consisted of a clear extract of the gonococcus in physiologic sodium chlorid solution in strength of 500 million per cubic centimeter. From 15 to 20 minims (0.9 to 1.25 c.c.) was given intramuscularly in the gluteal region with very little local reaction and no unusual general disturbance when followed by neo-arsphenamin intravenously. Four injections were given at intervals of three days and five days; after the last injection the combination therapy of neo-arsphenamin intravenously and protein intramuscularly was begun and was continued twice a week during a course of eight treatments. It was thought that the stimulation with microbic products which consist of protein as well as toxins would simulate more closely a specific reaction than milk protein.

As noted in Table 2, all the patients had been given two or three courses of treatment without any decided change as indicated by the ordinary nonquantitative Wassermann reaction, which represents the type reaction of about one third of the latent infections undergoing treatment. The Wassermann reaction has been negative or markedly reduced in degree in every instance after one course with the addition of gonococcus protein intramuscularly to the previous routine of treatment. Four patients who have been followed for seven months have remained serologically negative. Several have gained in weight, and their general condition is apparently improved. The lymph nodes have decreased in size under this combination treatment; and, since the lymph glands are frequently foci of latest spirochetes, it may be that the lymphocytic stimulations from the injection of a bacterial extract aid in the eradication of the resistant focus of inactive syphilis. It is well known that a larger percentage of secondary syphilis will become Wassermann negative than that of tertiary and latent syphilis with the same amount of treatment. The number of spirochetes in the lymph glands and other organs are many times greater during secondary than during tertiary syphilis. The liberation of more microbic products during the treatment of secondary syphilis with this added stimulation may have some relation to more effective treatment. Clinically, reactions of chills, fever and intestinal disturbance are more likely to occur in secondary syphilis after the injection of neo-arsphenamin than in tertiary syphilis, and in florid secondary syphilis the initial injection of neo-arsphenamin is often followed by a reaction very similar to that following an intravenous injection of the extract of gonococcus or other bacteria in the nonsyphilitic patient.

There is a general impression that neurosyphilis is not as frequent in those who have had a definite secondary rash. It would seem logical, if this is true, that some form of combined protein and drug therapy might lessen the incidence of later neurosyphilis in those patients with an absence of secondary lesions, and some additional treatment would be worth while since it is generally believed that there has been an increase in the percentage of neurosyphilis since the advent of arsphenamin therapy.

As this series of patients has not been observed longer than seven months, it cannot be said that later relapses may not occur; but the rapid response to the protein is distinct enough to warrant further use.

CONCLUSIONS

The injection of gonococcus protein intramuscularly in combination with neo-arsphenamin intravenously exerts a favorable influence on the reduction of the Wassermann reaction and on the clinical course, particularly the adenopathy. There is no deleterious action with the simultaneous use of the two methods of treatment.

7 West Madison Street.

Special Articles

REPORT OF COMMITTEE ON LYE LEGISLATION

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY, AMERICAN MEDICAL ASSOCIATION *

Your committee begs leave to report the passage, since our previous reports, of legislation providing for the proper labeling of household lye in the following states: Iowa, Vermont, Oregon, Nevada, New Hampshire, Colorado, Louisiana and Minnesota. This has been accomplished through untiring efforts of individual members of this committee in the respective states, to convince legislators of the need of such legislation. The following men deserve special mention for the successful work in their respective states: Dr. L. W. Dean, Dr. E. T. Brown, Dr. Ralph A. Fenton, Dr. J. Andre Fuller, Dr. Frank E. Kittredge, Dr. T. E. Carmody, Dr. Robert C. Lynch, and Dr. Horace Newhart. Equally good and hard work was done in other states, in which final passage was defeated in a number of ways that could not be adequately met, notwithstanding utmost efforts of the members in the respective states. But in all these states a good groundwork has been laid for ultimate success. With legislation previously reported as obtained in Pennsylvania, New Jersey, Florida and South Carolina, there are now in line twelve states. This should make future work easier, and no doubt is felt by your committee as to the ultimate outcome.

In justice to the packers of lye preparations, every effort has been made to obtain uniformity in the specifications as to the form of label. With this in view, a model bill for state enactment was drawn by Dr. W. C. Woodward of the Bureau of Legal Medicine and Legislation, American Medical Association, and is being followed. We believe that the best means of securing uniformity is by federal legislation, which also seems necessary from many other points of view.

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

A bill following the lines of the model bill of Dr. Woodward was introduced into the United States Senate by Hon. George Wharton Pepper, and a companion bill was introduced into the House of Representatives by Hon. W. W. Griest. Unfortunately, owing to the enormous amount of business before Congress, these two bills were among the hundreds not reached. We are assured of an early start at the next session of the federal Congress, and owing to the untiring efforts of Dr. Woodward to meet all reasonable objections raised by commercial interests affected, we now have assurance of hearty cooperation with us by these interests.

Thanks are due to Hon. George Wharton Pepper and Hon. W. W. Griest for efforts to obtain federal legislation; to Hon. S. E. Winslow for unfailing courtesy and kindly consideration, and to Dr. William C. Woodward for wise counsel and successful solution of the intricate problem of drafting model bills to secure the protection of the public welfare with a minimum of trouble to commercial interests.

Respectfully submitted.

Chevalier Jackson, Chairman.
William B. Chamberlin, Secretary.

REPORT OF COMMITTEE ON PROPOSED INTERNATIONAL CONGRESS FOR CONSERVATION OF VISION *

All properly organized and directed movements and efforts that have for their object the saving of sight are to be approved and should have the support of ophthalmologists. While, generally speaking, therefore, an international congress for the consideration of the subject of conservation of vision, so called, is to be commended and should receive the approval of the section, it is the opinion of your committee that the time is not yet ripe for such an undertaking.

The conservation of vision movement, embracing, as it does, not only all that is included in the science of ophthalmology but also all that relates to the subject in an educational, commercial and broadly social sense as well, has not yet been developed and crystallized in this country, at least, into a position where international cooperation could be successfully accomplished.

As a first step toward the holding of such a congress, your committee would suggest that the National Committee for the Prevention of Blindness take the initiative by making a survey of the leading organizations, both in this country and abroad, which are engaged in any form of endeavor to conserve vision, and that this body should act as a clearing house in the matter and should perfect measures to bring as many of the existing organizations into harmonious cooperation as may be possible or prove desirable.

The National Committee for the Prevention of Blindness is well adapted to take the lead in such an undertaking, being controlled by a board of responsible men and women representing various phases of professional and business life, and with ample financial resources.

This section should give assurance to the national committee of its willingness to cooperate and aid in the movement so far as it may be able.

In the event that the national committee agrees to assume the lead in this movement, the suggestion is offered that it empower a representative to present the subject before the approaching congress in London with a view to acquainting all English speaking ophthalmologists with the project, and to pave the way, as it were, for a conference or congress on visual conservation at some later date.

William Campbell Posey, M.D., Chairman.
Lucien Howe, M.D.
F. Park Lewis, M.D.
William Henry Luedde, M.D.

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 349)

DIADERMIC ADMINISTRATION

Diadermic administration is not a quick or a direct way of getting medicaments into the circulation, but it secures an evenness and constancy of medication that no other route supplies. The main objection to it is the uncertainty regarding the dosage. Since absorption is much less, the quantity applied is much larger than that which would be used internally. Diadermic administration is useful when action on the alimentary canal is to be avoided, or when it is necessary to push the medicine into the system by all possible routes. The application is made in places in which the skin is thin, as free from hair as possible, and well supplied with lymphatics, as on the flexor surfaces of the body. It is often well to use the various available surfaces in regular sequence; thus, first day, inner surface of left arm; second day, left flank and groin; third day, inner surface of left thigh; fourth, fifth and sixth days, the corresponding surfaces on the opposite side of the body, and then starting over again. This avoids undue irritation at any one point. The more thoroughly the ointment is rubbed in, the better the penetration. Heat and irritants likewise favor absorption. Sweating or preliminary cleansing by means of soap and hot water also help.

The objection that has been leveled against mercurial inunction on the score of the dirty appearance given the skin when the ointment is left in place has been overcome by the "clean inunction," which consists in removing the excess of ointment by means of gasoline, immediately after the conclusion of the rubbing process. It has been shown that absorption and clinical effects are quite as good as when the ointment is left in place. The use of a calomel ointment, on the other hand, to overcome the objectionable color of mercurial ointment has not been found efficient.

COMPOUND SALVE VEHICLES

The following compound salve vehicles present features that make acquaintance with them desirable.

Ointment of lead oleate, formerly known as diachylon ointment, is lead oleate plaster reduced to ointment consistency by the addition of an equal amount of white petrolatum. It is perfumed with 1 per cent of oil of lavender. It is a rather tenacious ointment of eminently soothing qualities, and is useful in acute dermatoses and for the softening of crusts.

Ointment of rose water, or cold cream, is a good example of a cooling salve. It owes these cooling qualities to about 20 per cent of stronger rose water, which is incorporated in a mixture of expressed oil of almond, white wax and spermaceti. The presence of 0.5 per cent of sodium borate must be borne in mind as a possible cause of incompatibility. This ointment is white and of a pleasant rose odor. It is used as a cooling and soothing

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* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* This is the sixth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

application to irritated and excoriated surfaces, such as chapped lips and hands. Unfortunately, it has a tendency to rancidity; and numerous attempts have been made to enhance its keeping qualities. Indeed, the various commercial cold creams differ from the official rose water ointment in being made from substances that are not liable to rancidity, containing chiefly white petrolatum and liquid petrolatum with wax. As the water of rose water ointment has a tendency to separate on standing, in some commercial cold creams oil of rose and glycerin are substituted tor rose water. However, these changes lessen the soothing properties and do away with the cooling qualities for which this ointment is largely employed. Hence, a good, recently prepared official rose water ointment is often preferable to a commercial cold cream. A note of warning must be sounded against the so-called vanishing or "greaseless cold creams," which of late have become quite popular. Strictly speaking, these are not cold creams at all, but soaps obtained by a reaction between stearic acid and an alkali, chiefly sodium carbonate. Obviously, such a preparation has good detergent qualities and is more efficient than the greasy cold cream for cleansing the skin, but the soothing qualities of a true cold cream have been replaced by the possibility of producing an irritation inherent in soaps.

PASTES

The pastes are doughlike or jelly-like preparations, and they fall under two headings: the fatty or unguent pastes, and the nonfatty or hydrophil pastes.

The fatty pastes are doughlike preparations generally made with an ointment vehicle and containing from 40 to 60 per cent of powder. If a still larger quantity of powder is to be incorporated—up to 70 per cent—an oil must be employed. Pastes are better protectants than ointments, but less penetrating. They resemble cerates in not readily soaking through dressings, but have a slight drying action, owing to the presence of the powder, which the cerates do not possess.

One of the most popular and efficient healing applications for acute dermatitis is Lazar's paste, which contains 25 parts each of zinc oxide and starch and 50 parts of petrolatum, usually medicated with 2 per cent of salicylic acid. A formula for this is to be found in the National Formulary under the name of zinc paste. The paste is applied rather thickly, and the affected part then is dusted with talcum powder to form a protective crust. This paste can be made softer by using 40 per cent of the mixed powders and 60 per cent of petrolatum, or more tenacious by using hydrous wool fat and petrolatum in equal parts as the ointment vehicle instead of the petrolatum alone.

Sulphur zinc paste for chronic dermatitis may be prescribed by adding 20 per cent of sulphur to Lazar's paste, and, to prevent an excess of powder, by reducing proportionately the quantity of the other powder ingredients.

When the skin is so irritated that unguent pastes are too hard, oil pastes may be used. Among these are an oil paste composed of equal parts of zinc oxide and olive oil, and Unna's soft zinc paste (N. F.), composed of equal parts of calcium carbonate, zinc oxide, linseed oil and lime water. The latter is so mild in action that it is tolerated even in the most irritative dermatitis.

The nonfatty pastes are sometimes better borne by diseased skin than the various fatty applications. This is particularly likely to be the case when there is considerable exudation from the skin. The nonfatty pastes are also more cleanly and cooler. Those pastes that contain much glycerin remain moist; the others dry gradually and leave a varnish-like protective film.

The simplest example of such a paste is starch paste, made exactly as laundry starch is prepared. Starch is rubbed with cold water into a smooth cream; and then, while it is being constantly stirred, boiling water is added until the proper jelly-like consistency is secured. By adding a little glycerin, not more than 20 per cent, the paste may be kept from drying. To an acutely inflamed skin, starch paste is the kindliest application for the removal of crusts, and this must always be attended to before any other remedy is applied to the diseased skin. The official glycerite of starch contains too much glycerin (70 per cent) for dermatologic purposes.

A drying paste, useful as a protective varnish on the face in infantile eczema, is Pick's paste, made of 5 parts of tragacanth, 2 parts of glycerin, and 93 parts of water, mixed and heated on the water bath. Such a paste may, of course, be medicated as desired.

Lubricating jellies, for the lubrication of catheters and surgical instruments, or of gloves and finger cots, contain from 1 to 2.5 per cent of tragacanth, 10 to 20 per cent glycerin, and water, usually with the addition of an antiseptic, such as phenol, from 1 to 3 per cent, or mercuric oxycyanide, 1 : 1,000.

Poultices, or cataplasms, are pastes intended chiefly for the application of heat or warmth and moisture to a part of the body. Although fomentations and compresses are nowadays generally used instead of poultices, because they are cleaner, there are still occasions when the old fashioned flaxseed poultice may be usefully put into requisition. One of its special advantages is that it holds heat longer—by reason of the oil contained in it—than almost any one of its modern substitutes.

The preparation of a linseed poultice may be directed as follows:

One stirs the linseed meal into boiling water so as to make a thin dough, spreads this on a piece of cloth up to within about 2 inches of the edge, covers it with a thin piece of muslin, and folds the edges of the cloth over it. The proper temperature of a poultice is that which is just easily borne by the back of the hand. If the poultice is too hot, one may put a thicker piece of cloth over the face of it. To have it retain heat as long as possible, heat loss is counteracted by covering it with some waterproof material, such as oiled silk, and a poor conductor of heat, such as a thick layer of cotton, keeping the whole in place with an appropriate bandage. When the poultice has become lukewarm, another should be in readiness to take its place before it is removed. A poultice may be used again and again simply by reheating it in a double boiler.

In the olden days, teachers of therapeutics were wont to tell their students to remember the two "p's"—pain and poultice. This is just as true today as it was then, if we consider fomentations and compresses as merely modern modifications of the poultice. Even today, many old fashioned persons are much more familiar with poultices and are able to use them more efficiently than their modern substitutes. A use to which poultices have not been put to the degree to which they probably deserve is suggested by Veiel;[21] namely, for the healing of indolent ulcers. He reports three cases of bad roentgen-ray ulcers cured in a relatively short time, from two to four months, by means of warm poultices employed with the following technic: The poultice is made from linseed meal and milk, boiled until the spoon inserted in the mush will stand up in it. The mush is then wrapped in a double layer of gauze and applied to the ulcer, which has previously been covered with strips of gauze moistened with a boric acid solution. By means of two such poultices, the one being warmed on the water bath as the other one in use commences to cool, this treatment is kept up from early morning till late in the evening. Over night a warm boric acid compress is applied. As a result of the uniform warmth and the hyperemia thus produced, together probably with the moisture, which furnish a favorable culture medium, cell proliferation and with it healing is favored. This treatment is also useful in torpid varicose ulcer.

The cataplasm of kaolin (N. F.), a kaolin glycerin paste, flavored with methyl salicylate and oil of peppermint, and rendered antiseptic by 4.5 per cent of boric acid and 0.5 per cent of thymol, is an example of a substitute for the linseed poultice, which, though it does not hold heat as long as the latter, has the advantage of being nonfermentable, even bacteriostatic, and of clinging to the mastoid or the chest when other similar applications are more difficult to retain in place. The paste is heated on the water bath, is spread rather thickly and as hot as the patient will bear to the affected part by means of a case knife, and is covered with a layer of cotton. The paste sticks to the skin and the cotton sticks to the paste, thus forming a warm covering for the part, which is particularly grateful in the presence of cutaneous hyperesthesia. As this application cannot be conveniently changed until it loosens from the skin by the accumulation of sweat underneath, which occurs usually within twenty-four hours, it can hardly be considered an efficient means of application of heat; it secures merely warmth and moisture and is relaxant rather than stimulant.

EAR MEDICATION

The external ear, including the external auditory meatus, and even the membrane covering the drum head, are epidermal in nature. We have here a fatty surface of a relatively high degree of tolerance to chemical agents, quite analogous to that of the skin. Undiluted alcohol or glycerin may be used without harm, provided no perforation of the drum head exists. Should a perforation into the middle ear be present, the rules relating to mucous membranes rather than dermal therapy must be respected.

Blowing of powder into the meatus (insufflation) has only limited value. It is contraindicated in the discharging ear, as the powder and pus may form a deposit difficult to remove and may dam up the discharge.

Lotions are used by instillation (ear drops), injection or irrigation, or are applied by means of a cotton swab or a gauze strip packed into the meatus. Very cold fluid should never be used. For the instillation of ear drops, the patient turns his head to the side so that the affected ear is uppermost, and he should keep it that way for some time. For ear irrigation, the affected ear is held downward over a vessel to receive the return flow. Ointment is occasionally employed in the ear for dermatitis, but otherwise is contraindicated.

Liquids instilled into the ear are useful for softening or dissolving cerumen, crust, scales and pus and as antiseptics, deodorants, astringents and local anesthetics.

For earache due to acute otitis media, glycerin is very commonly employed in form of ear drops. By its hygroscopic tendency it may cause an exosmotic current from the middle ear and a consequent lowering of pressure in the tympanic cavity, provided the external meatus is kept liberally filled with it. Phenol (5 per cent) is frequently added for its analgesic quality. The drops are usually instilled as hot as can be borne, the hyperemia produced by the heat also having analgesic potency and possibly favoring resistance to the infection as well. It is best to pour the drops directly into the ear, and to keep it filled by having the patient lie down, his head on the side with the ailing ear uppermost. Preliminary prolonged irrigation with water as hot as can be borne and subsequent application of completely wrapped hot flaxseed poultices over the affected ear are valuable adjuncts of treatment. If this regimen does not relieve, incision of the drumhead is usually indicated.

A useful lotion for a discharging ear consists of a saturated solution (4 per cent) of boric acid in alcohol. An ear that has just perforated may not tolerate as strong an alcoholic solution; hence it is well to dilute the lotion—prescribed in full strength—to perhaps one-quarter strength in the beginning, gradually increasing the strength, until the solution is employed in full concentration. It is best to use it on the cotton swabs with which the ear is cleaned. One thing that this treatment certainly accomplishes is the prevention of infection of the discharge and the consequent offensiveness of odor.

These examples will suffice to bring out the great difference that exists between applications suitable for an epidermal membrane and those to be used on mucous membranes, to which attention will next be directed.

(To be continued)

New and Nonofficial Remedies

ANTISTREPTOCOCCUS SERUM

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement.

W. A. PUCKNER, Secretary.

For some years the Council has been questioning the value of antistreptococcus serums. These products have been retained in New and Nonofficial Remedies with the caution that on the basis of clinical reports there is perhaps justification for the use of the serum in streptococcus infections, but that there is no scientific basis for it. To obtain an estimate of the present esteem in which antistreptococcus serums are held by clinicians, Dr. Emil Novak at the request of the Council sent a questionnaire to a number of surgeons, gynecologists and obstetricians. The Council considered the report prepared by Dr. Novak on the basis of the information which he obtained (Report on Antistreptococcus Serum, THE JOURNAL, Jan. 16, 1926, p. 189) and endorsed its publication.

In consideration of the opinions contained in Dr. Novak's report, the Council decided to retain antistreptococcus serum preparations in New and Nonofficial Remedies provisionally.

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[21] Veiel, Fritz: Die Behandlung von Roentgen Geschwüren mit warmen Breiumschlägen, Klin. Wchnschr. 4: 1356 (July 9) 1925.

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SATURDAY, FEBRUARY 6, 1926

HEROISM AND SCIENTIFIC PROGRESS

Again an opportunity has presented itself for the expression of the admiration and gratitude felt by an appreciative mankind to a group of self-effacing persons who have served as test subjects in the governmental study of dengue. The almost cryptic reference to these human volunteers is made in a report of distinguished officers from the U. S. Army Medical Department Research Board in Manila.[1] As if the expected had occurred "in the line of duty," we are told of the military personnel—sixty-four men who "proffered their services voluntarily," for experimentation relating to the transmission of dengue fever by mosquitoes. No mention is made of the possible suffering involved: the initial fever, the slow convalescence with persistent pains, mental depression and marked physical prostration. To the untutored it may be a revelation in this connection to learn that the disease under consideration has been confused with yellow fever in the past. The prospect was therefore scarcely one that would attract a coward or a shirk. Indeed, dengue was actually produced in fifty-one of the sixty-four volunteers who permitted themselves to be bitten by suspected mosquitoes or injected with suspected blood, not for personal gain but to help promote human welfare.

For the proper evaluation of this heroic enterprise, it matters little what discoveries of permanent value arose from the experimenter's devotion.

> Theirs not to make reply,
> Theirs not to reason why.

It was demonstrated, however, that dengue is transmitted by *Aedes egypti* as had previously been suspected, whereas *Culex quinquefasciatus* does not transmit it. The results obtained indicate that the patient is infective to mosquitoes during the first three days of the disease, but that on the third day of an attack the mosquito frequently will fail to pick up the virus. It is demonstrated, furthermore, that subjects in the late prodromal stages of dengue—from six to eighteen hours prior to onset—are infective to *Aedes.* The experimental evidence obtained warrants the statement that once *Aedes egypti* becomes capable of transmitting the virus to human beings, this characteristic is retained throughout the remainder of the mosquito's life. Experimental dengue was produced in three volunteers with mosquitoes that had been infected, respectively, sixty-two, sixty-six and seventy-five days previously. The incubation period of the disease in the forty-seven experimental cases varied from four to ten days, inclusive. For all practical purposes the incubation period may be considered as being from four to six days, inclusive, as it fell within that period in 89 per cent of the experimental cases reported.

Such is the story, briefly told, of the contribution of the soldiers. It is not embellished with references to discomfort or pain. One inevitably recalls martyrs to science who have succumbed to the bite of infected insects: Jesse W. Lazear; Howard T. Ricketts; Arthur W. Bacot. It should be the prayer of all who love their fellow men that experiments on animals be made available when possible to spare the human sacrifice, or at least avert the danger. Let the antivivisectionists and their ilk ponder well this recital. A. H. Smith[2] has fittingly expressed a tribute to our martyrs:

> In the history of progress in medicine we have countless instances of men who have unselfishly spent their efforts in study and tireless experimentations for the advancement of knowledge. And then we have those selfless souls who have given not only their efforts but their lives in the struggle for mastery over ignorance and disease.

A NUTRITIONAL OUTLOOK

The World War served to focus attention in a popular way on the problems of human nutrition to an extent never observed before. The appeal of the United States Food Administration to the nation asserted that all our questions centered in food: its production, its distribution, its use, its conservation. "The more you know about these things," Mr. Hoover exhorted, "the more valuable you will be and the greater will be your service to humanity." During our first year as a belligerent (April 1, 1917, to April 1, 1918) we exported fifteen billion pounds of food—an increase of more than 200 per cent over the prewar average. The food shipped was enough to ration completely more than 21,000,000 men, and to supply a considerable surplus of protein-rich foods and fats besides. Much of this surplus was the result of the saving of the American people. This was done in spite of the fact that the estimated total production of the country for the fiscal year, in terms of nutritional units, was from 7 to 10 per cent below the average of the previous years.

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[1] Siler, J. F.; Hall, M. W., and Hitchens, A. P.: Transmission of Dengue Fever by Mosquitoes, Proc. Soc. Exper. Biol. & Med. 23: 197 (Dec.) 1925.

[2] Smith, A. H.: Bacot, A Martyr to Science, Sc. Month. 15: 359 (Oct.) 1922.

It was almost inevitable that under these conditions much thought should be devoted to the nutritive program of the individual as well as the nation. Nothing was to be gained by sacrifice through undernourishment; much hinged on "keeping fit" through proper feeding at a time when customs in diet were being vigorously assailed and "substitutes" were being recommended as a part of war-time economy. Thus, certain conventional "standards" of nutrition, involving the energy, protein, mineral and vitamin intake, began to find widespread acceptance. One cannot read the sales promotion propaganda in the advertising columns of the present day without noting the implication of a widespread education with regard to food values.

Estimates made about two decades ago in New York among the less well-to-do classes indicated that the average cost of adequate nutrition could not be reduced below 20 cents for each person. Accepting 3,000 calories a day as an average individual requirement of food fuel, the cost of 100 calories would approximate $0.007. It might be expected that a college community would afford a fairly representative indication of current food customs wherein one could compare "theory" with "practice" in American dietaries. According to a survey[1] at the Kansas State Agricultural College, Manhattan, among about sixty organizations supplying meals to students the cost per man daily ranged from $0.241 to $0.526, the average being $0.356. The cost per hundred calories averaged $0.0125, and ranged from $0.0088 to $0.0157. It is interesting to note that nutritive return did not necessarily parallel the food expenditure; the five dietaries showing the highest cost per hundred calories had more mineral deficiencies than did the five dietaries showing lowest cost. Such cheaper dietaries, as the investigators pointed out, need not be unsatisfactory in nutritive value or in variety, if skill and care are used in the planning of meals and the selection and preparation of foods. In a month's study of the foods purchased without dietetic supervision, the protein was found to be sufficient and the energy probably adequate. There are some indications that a more liberal substitution of foods to furnish calcium, phosphorus, iron and possibly some of the vitamins might have been advantageous. In any event, if the Kansas studies may be regarded as representative, it is apparent that the food customs of our American youth of collegiate age do not represent wide departures from the essentials of good nutrition. This is an important finding in the light of current complaints of widespread undernutrition among the children of school age in this country. It would be unfortunate, indeed, if "nutrition classes" such as have been widely organized in connection with American primary schools were deemed essential to the youth of a later period when they are nearly ready to begin life's more serious tasks.

THE PHYSICIAN OF THE FUTURE

Time was when the words "state medicine" were sufficient to make any medical leader straighten up in his chair and begin to select the proper vocabulary with which to annihilate the proponent of a state conducted medical service. Indeed, committees of the House of Delegates and that august body itself, resolved into a committee of the whole, debated long and vigorously at two different sessions a proper definition of the term. No doubt the majority of practitioners of medicine today still look on the conception with antipathy. The subject is nevertheless but little discussed in medical periodicals, and it would seem that the ghost has been successfully laid and that agitation of the matter in these columns is merely a reconjuring of a futile shadow. Nevertheless the appearance in periodical literature, particularly that in the domain of social medicine, of articles dealing with the relation of the physician of the future to his community, gives an opportunity once more to consider, as the Congressman might say, whither we are drifting.

The president of the Rockefeller Foundation, Dr. George E. Vincent, in an address delivered at the annual meeting of the Medical Society of the State of New York last June, endeavored to enumerate present tendencies in medicine without forecasting the future. He observed a medical profession that does not function adequately in the light of our present knowledge. More than three fourths of our population, he asserted, are treated by general practitioners who have limited technical appliances, little or no specialization of skill, and slight relation to medical services organized in hospitals, dispensaries and clinics. The rich, constituting 5 per cent of our population, receive the best skill of well equipped specialists, and the poor, constituting 15 per cent, receive similar skill through organized institutional practice. As a sociologist Dr. Vincent feels that there are forces at work tending to modify this situation. The advance in preventive medicine, the principle of insurance, including state systems, industrial groups, sick benefit societies and similar organizations, are helping to distribute costs.

The centering of practitioners in the cities is creating another problem. Neglect of the psychic side of medicine, failure to educate the public, narrowly conceived professional policies, and the shortcomings in the knowledge, skill or integrity of some physicians, Vincent charges, have had their part in producing the present situation. And he feels that the general practitioner is doomed unless he will submit to a measure of organization and team play in the cooperative use of laboratories and other resources, in meeting the demand for spreading costs of sickness over large groups through readjusted forms of compensation, and especially unless he will become a practitioner of preventive medicine. In fact, the final warning sounded by Dr. Vincent was essentially a prediction of state medicine. "No thoughtful person can welcome the extension of state medicine beyond the legitimate and necessary field of public health activity," he said, "but if private initiative and voluntary cooperation fail, it may be impossible to resist the demand for governmental intervention."

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[1] Kramer, Martha M., and Grundmeier, Edith: Food Selection and Expenditure in a College Community, J. Home Economics **18**: 18 (Jan.) 1926.

Again, in an essay entitled "The Doctor and the Changing Order," presented before the New York Academy of Medicine and printed in the *Survey*, Dr. Vincent repeated and extended his remarks. His skilfully worded article carries the lightly quizzical tone which the fluent sociologist uses so ingratiatingly. But the tenor of the essay, and it is far too long to present even in abstract in these editorial columns, is a cry for an organized medical service. Society—the people—that potent force which molds mankind to its will, seems to indicate a preference for the general practitioner. But this practitioner, Dr. Vincent insists, must be a different fellow. "Only in university clinics, in well developed hospitals, dispensaries and pay clinics, in true group practice, in health centers," he says, "is there to be found genuinely organized medicine, i. e., the teamwork of skilful diagnosticians with well trained specialists backed by efficient laboratory, operating and treatment facilities." Granted that such organizations may be mechanizing medicine, eliminating the personal factor and the human relation, he sees them as advancement: "The specialization and organization are accepted as unescapable consequences of social changes." And his final prophecy is again perhaps well within some of the definitions of state medicine that have been mentioned. "It looks as if society means to insist upon a more efficient organization of medical service for all groups of people, upon distribution of the costs of sickness over large numbers of families and individuals, and upon making prevention of disease a controlling purpose."

The medical leaders of medicine—such presidents of the American Medical Association as Billings, Pusey, Haggard, Wilbur and Lambert, and members of the Board of Trustees and of the House of Delegates of the Association—have insisted again and again that, come what may, the intimate personal relationship of physician and patient is fundamental to sound practice and absolutely essential to proper care of the patient. It is, indeed, the one factor that will reach not only the body but the mind—the soul, perhaps—of the invalid. Sir James Mackenzie, far sighted student of mankind, devoted the declining years of a great life to preaching this gospel. In "Pygmalion, or the Doctor of the Future," a disciple of Mackenzie, Dr. R. M. Wilson, draws a vivid, compelling picture of a medical man whose relationship to his patients will, he believes, be even more intimate than present day leaders have demanded. "Once upon a time, the priest was the doctor," he says; "tomorrow the doctor may well have become the priest, in a new sense of the word." The physician of the future, as Wilson sees him, will not, as is now usually assumed, be a scientist of the orthodox type, a man with the technic of laboratories at his finger ends, and with the aim in his mind of elucidating the phenomena of life in terms of chemistry or physics. "Rather, he will be a humanist," says Wilson, "a man with the widest possible knowledge of human nature, and the deepest possible understanding of human motives. He will be a cultured man, ripe in intellectual attainments, but not lacking in emotional sympathy, a lover of the arts as well as a student of the sciences. This is, indeed, no more than a projection into the future of a gracious figure of the past—for the great physicians of other days were all, likewise, great citizens of humanity."

Now here is a conflict between two conceptions of the medicine of the future. As Vincent expresses it, "It is this very conflict between the call for team work on the one hand and the demand for human insight and sympathy on the other that creates a perplexing problem." And whereas it seems to Vincent, or at least so his published article indicates, that the demands of the future will probably sacrifice the human insight for the efficiency of the team work, great practitioners of medicine conceive of such a sacrifice as involving the death of the art of medicine, the replacement of the human profession of medicine by organized medical department store or factory mechanicians.

The protests that have been made in the editorial columns of The Journal against the commercialization of periodic physical examinations have called attention to the first encroachments of such superorganized, big business methods on medical practice. The development of such institutions, of organizations for routine treatment of venereal disease, of one price hospitals with no departments for social study, represent more and more the adaptation of commercial methods to medical practice. They are, in fact, exaltation of mass production and delivery with submergence of the individual. The development of such organizations has been consistently opposed by the physicians of each community in which they have functioned, yet each of them has persisted in its practice of medicine apparently with the support of some physicians, for without medical employees not one of them could continue to function.

Times change, and we with the times. The socialist demands an organized state medical practice; the sociologist apparently sees an almost inevitable trend toward such practice; the socialized physician sees great efficiency in such practice. But the psychologist, the humanist, the great practitioners of medicine, see no hope for the real *cure* of ailing humanity in mechanistic methods which discount individual relationships. As to the physician of the future, in the words of George Vincent, "Who knows?"

Current Comment

THE GREAT PHYSICIANS

Some time ago, as noted in THE JOURNAL,[1] students in a class in medical history were asked to name the five greatest contributors to medical progress. In their choice, Pasteur, Hippocrates, Harvey, William Osler, Lister, Koch, Galen and Laënnec were the leaders. The editor of the *Medical Press and Circular* now makes his own selection, which includes Hippocrates, William Harvey, Sydenham, John Hunter and Louis Pasteur, selected in chronological order; and, as a second group, Jenner, Laënnec, Simpson or Morton, Lister and Roentgen. As might have been expected, British physicians displayed more interest in the matter than was shown by American readers, perhaps because the cultural aspects of medicine assume a somewhat more prominent place in British medical education. A correspondent of the British periodical suggests the replacing of John Hunter on the first list by Morgagni on the grounds of precedence, and the replacing of Pasteur by Lister for a reverse reason. Another correspondent has felt that Lister should by all means replace the name of John Hunter on the first list, citing that the only reason for including Hunter was the great number of his contributions to exact knowledge. It is interesting to note that not one of the British observers has felt that the name of William Osler, which loomed so large on the horizon of the medical student, should be placed among the names of the ten great contributors to medical science.

PROTEST THE SHEPPARD-TOWNER ACT

The Sheppard-Towner Act will continue in force two additional years—until June 30, 1929—if two bills[2] introduced into Congress to accomplish that end are permitted to become law. Otherwise, the act will expire by a self-contained limitation, June 30, 1927. The proposed continuance of federal domination over health matters in which the state is constitutionally supreme is in itself pernicious. The proposal is, moreover, astutely timed to force on Congress at the very threshold of the next presidential campaign the question of making the system permanent. It will be remembered that the original proposal was also incorporated as a plank in the platforms of both leading political parties. The proponents of the Sheppard-Towner scheme are apt to brush aside facts and figures by an emotional appeal on behalf of mothers and babies. Any discussion of the scheme in the days immediately preceding a presidential campaign is certain to be complicated further by considerations of political expediency, arising out of the question as to who is going to deliver the women's vote, and where. The act became a law five years ago. Millions of dollars of federal and state moneys have been spent to enable its supporters to establish its merits. Who will say that the evidence submitted indicates that they have done so? Their present plea for the continuance of the scheme for only two years may well be construed as an admission that they have found nothing in the evidence that would justify them in asking for enactment of the procedure on a more lasting basis. The Sheppard-Towner Act has been condemned unreservedly by the House of Delegates of the American Medical Association. The pending bills to continue the act in effect are clearly within the ban of such condemnation. Now is the time to protest against their enactment. The Committee on Interstate and Foreign Commerce, House of Representatives, to which the House bill has been referred, at the present writing has not made its report. Even after it does so, the bill must be acted on by the House. The Senate bill is still to be acted on by the Senate Committee on Education and Labor, and by the Senate. If the Senate and the House agree on a measure, it will still have to be approved by the President. State associations and county societies, and the physicians of the country generally, should immediately telegraph or write to the President and to their Senators and Representatives protesting against the enactment of these bills.

REPORTING OF MATERNAL DEATHS

Two laudable and interdependent movements—the reduction of maternal mortality, and its corollary, universal, conscientious reporting of the causes of death in childbirth—continue to attract the attention of sociologists, economists, physicians and public health workers generally. In 1924, the maternal mortality per hundred thousand white mothers between the ages of 15 and 44 years was 59.1. More than one third of these, 22.5, died of puerperal septicemia.[1] Annually during the last ten years, Great Britain has lost 3,000 of the 700,000 women who gave birth.[2] "Figures vary, as regulations regarding notification of puerperal sepsis are not properly observed."[2] Hospital studies and hospital technic have done nearly all that they can. Still the four highest maternal death rates reported in a recent study are: Cook County Hospital, Chicago, 3.6 per cent; Bellevue and Associated Hospitals, New York, 2.5 per cent; Jefferson Hospital, Philadelphia, 2.3 per cent; Boston Lying-In Hospital, 2.2 per cent.[3] The laboratory has made known the causative organisms and the pathology; little more can be looked for in this direction. Treatment, universally found inadequate and finally focused on the hope offered by intravenous therapy, has not found the dyes invariably successful. Blood transfusion[4] is offered in the hope that it may enhance natural processes. No physician likes to report a puerperal death, least of all a death from puerperal septicemia. The facts that in

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[1] Medical Historical Perspective, Current Comment, J. A. M. A. **85**: 1645 (Nov. 21) 1925.

[2] S. 2696, A Bill to Extend the Provisions of Section 2 of the Act Entitled "An Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy, and for Other Purposes." H. R. 7555, A Bill to Authorize for the Fiscal Years Ending June 30, 1928, and June 30, 1929, Appropriations for Carrying Out the Provisions of the Act Entitled "An Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy, and for Other Purposes," approved Nov. 23, 1921.

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[1] Statistical Bull., Metropolitan Life Insurance Company **6**: 2 (Nov.) 1925.

[2] Puerperal Sepsis, editorial, Canad. M. A. J. **15**: 948 (Sept.) 1925.

[3] Tottenham, R. E.: Maternal Mortality of the United States, Irish J. M. Sc., November, 1925, p. 516; abstr. J. A. M. A. **86**: 230 (Jan. 16) 1926.

[4] Polak, J. O.: Further Studies in Puerperal Infections and Their Treatment, Am. J. Obst. & Gynec. **10**: 521 (Oct.) 1925.

one case he was called at the last minute and sterility was impossible, and that retrospect of another case discloses to him no break in his technic, infection occurring in spite of his care, are likely to be overlooked by others. Still, the courage that has always activated scientific medicine should not fail in this instance. Accurate reporting and study of cases may be the stimulus whereby hundreds of "mothers in the heyday of their lives,"[5] who leave behind them thousands of motherless children, may be saved to their families and to the world.

ORIFICIAL SURGERY

Foreigners, with their somewhat older civilization, are inclined to view with merriment the development in this land of the free of the numerous peculiar doctrines of healing which appear on the medical horizon from time to time. The *British Medical Journal* views with well justified complacency the fact that the people of Great Britain "are slow to assimilate new ideas," and cites the "comparative indifference with which the teaching of those two great schools of American thought, chiropractic and osteopathy," have been received by the British medical profession. In its current issue, the British publication becomes hilarious again at "the determined efforts of America to effect the moral uplift of mankind." It would seem that the School of Orificial Surgery of Chicago has suddenly become apparent on the British scene, and that the British editors have been having a most enjoyable time in scanning its circular. This document explains that one of the main objects of the school of orificial surgery is the "uplift" and the training of "bigger, broader and better" physicians. Just how the uplift is to be accomplished in the direction of the orifices is, of course, not made plain. The *British Medical Journal* suggests cynically that British legislators, who, it seems, are being appealed to for help in grafting chiropractic and osteopathy into the British medical scheme, provide at the same time for a proper disposition of orificial surgery. Can we expect the world to take our science seriously while the preposterous claims of the numerous cults with which our people are afflicted continue to be tolerated?

ENGLISH WEIGHTS AND MEASURES AS VIEWED ABROAD

A new Brazilian journal,[6] in its first issue, renders a glowing tribute to medical achievements in English-speaking countries, especially the United States. It points out, at the same time, that American medical progress would be even more appreciated abroad if the metric system should receive recognition in books from this country. "When one tries," says the editorial writer, "to reduce English dosage to our own, this involves a series of steps, if not difficult, at least time consuming and bothersome. Take, for instance, a formula requiring $\frac{1}{40}$ or $\frac{1}{200}$ grain!" The writer suggests that American publishing houses give in parenthesis the metric equivalents after the English figures. The proposed method has long been in use in the columns of The Journal. American publishing houses should seriously consider the advantages of adopting a similar practice, for the sake of promoting both medical knowledge and international good fellowship.

Association News

DALLAS SESSION

Exhibit on Tropical Medicine

The coming to this country of Dr. Aldo Castellani to take the chair of tropical medicine in the Tulane School of Medicine provides an unusual feature for the Scientific Exhibit at the next annual session of the American Medical Association in Dallas, April 19-23. Dr. Castellani is preparing especially for this occasion a complete demonstration of "Some Tropical Mycoses and Their Causative Agents." As is generally well known, the pathogenic fungi that produce disease conditions in tropical countries are occasionally transmitted to temperate zones, and it is no longer rare, on account of the great increase in international travel, to see cases in this country. It is proposed, as part of Dr. Castellani's exhibit, to demonstrate the technic of isolation and of staining various mycologic specimens. The international reputation of Dr. Castellani and his experience as a teacher in the London School of Tropical Medicine indicate opportunity to visitors to the session for postgraduate study in a field rarely covered in American schools.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARIZONA

Sanatorium Appointments.—Dr. William H. Welch, Baltimore, honorary president of the Desert Sanatorium of Southern Arizona, Tucson, has been appointed on the board of directors of that institution for 1926, also Dr. Allen K. Krause of Baltimore; Dr. Bernard L. Wyatt, Tucson, has been elected president.

ARKANSAS

Personal.—Col. Louis M. Maus, U. S. Army, retired, has resigned as intelligence officer of the Medical Intelligence Bureau for Hot Springs; Colonel Maus organized the bureau in 1924.

Hospital Burned.—Fire recently destroyed the hospital building of the Arkansas State Tuberculosis Sanitarium near Booneville, with a loss of about $40,000. Dr. John Stewart is the superintendent.

CALIFORNIA

Smallpox in Los Angeles.—A newspaper report, January 28, stated that there had been eighteen deaths among 177 cases of smallpox in Los Angeles in January; seven new cases were reported on the foregoing date.

CONNECTICUT

Yale Raises Tuition.—Yale University announced, January 27, an increase of $50 in its undergraduate tuition, effective next fall. Additional appropriations will be made to prevent increasing the financial burdens of self-supporting students, who comprise about one third of the undergraduate body. According to the announcement, undergraduates now pay less than half of the cost of instruction, and in raising the tuition, the university is extending a policy already adopted in the schools of law and fine arts.

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[5] Morris, E. S.: An Essay on the Causes and Prevention of Maternal Morbidity and Mortality, M. J. Australia **2**: 301 (Sept. 12) 1925.

[6] Medicina e Pharmacia **1**: 20 (Aug.) 1925.

DISTRICT OF COLUMBIA

Society of Sanitation.—Initial steps to organize a society of sanitation in the District of Columbia were taken, January 11, by about seventy-five members of the American Public Health Association and others interested in public health work. Dr. Victor C. Vaughan presided at the meeting; a committee was appointed to draft by-laws, and a second meeting will be held the second Monday in February to complete the organization. The object of the society will be research and propaganda about health conditions in Washington.

Warrants for Barbers.—Warrants for sixty proprietors of barber shops in the District of Columbia are said to have been issued from January 5 to January 18 in the drive of the health department for better sanitation. The seventeen sanitary inspectors of the department were concentrated for a time on the barber shop problem. The chief defect found was uncleanliness; it was also found that the barbers failed to wash their hands before working on customers, and that there was a general disregard of regulations for the sterilization of instruments. A violation of the sanitary regulation is punishable by a fine of not more than $25

Pneumonia Must Be Reported.—Eighteen new cases of pneumonia were reported to the health department of the District of Columbia, making the total number of cases on the health department's records, January 11, reported since January 1, as forty-seven; three deaths also were reported on this date, bringing the death total since the New Year to twelve. District health officer William C. Fowler expressed the belief that his records do not indicate accurately the number of pneumonia cases in the city. "I am quite satisfied that the department is not getting a complete report," said the health officer. "The death rate is entirely too high for the number of cases on our records." Dr. Fowler said that physicians can be penalized with a fine ranging from $10 to $40 for not reporting pneumonia.

FLORIDA

Smallpox Stops Communication with Bahamas.—According to the Chicago *Tribune*, the British government has prohibited communication between the Bahama Islands and Florida until further orders, on account of outbreaks of smallpox in Florida; there were about forty-five cases of smallpox in Miami, January 28, it is said, and cases in other towns in the Florida keys.

Society News.—Dr. Ernest C. Levy addressed the Hillsborough County Medical Society on the smallpox situation in Tampa; ninety-six cases are said to have occurred from January 1 to January 19. A city-wide vaccination campaign is in progress and about 30,000 persons have been vaccinated. The society endorsed the giving of publicity to the smallpox outbreak in Tampa by Dr. Levy.

Health at Jacksonville.—Among sixty-eight cities having a total population of 29,000,000, the highest death rate (25.8) for the week ending January 23 appeared for Jacksonville. According to the telegraphic reports to the Department of Commerce, the death rate in Jacksonville for the corresponding week in 1925 was 17.4.——Dr. Charles Hall Farmer, head of the Aiken County Health Department, South Carolina, since its formation, has resigned, effective February 15, to accept a position as medical officer at Jacksonville.

ILLINOIS

Health at Rockford.—The death rate in Rockford in 1925 was 8.82 per thousand population. According to the commissioner of health, 73.5 per cent of the total number of births occurred in hospitals, as compared with 43 per cent in 1918.

Health Survey.—Thomas Parran, Jr., U. S. Public Health Service, has been detailed to work in Illinois for a time, and in cooperation with Dr. William S. Keister, city health director, will conduct a health survey of Decatur. Health surveys will be made in fifteen of the larger cities of the state outside Chicago.

Society Operates Credit Bureau.—The Vermilion County Medical Society, Danville, has its own credit-rating and collection bureau, which, in the first two years of its work, collected more than $25,000 on old accounts turned in by members. Three full-time employees carry on this service, which is maintained twenty-four hours a day.

Pneumonia Typing.—The laboratory of the state department of health will culture and type specimens of sputum from cases of pneumonia, to assist in the antipneumonia campaign. The department suggests, however, that, in view of the difficulties of mailing specimens, local laboratories be used as much as possible.

The Smallpox Situation.—The number of cases of smallpox in Illinois is increasing and they are widely distributed. The state department of health reports that twenty-five cases have been reported from Elgin since January 1; fourteen cases from Champaign; eight from La Salle County; eleven from Marshall, and three from Iroquois. One death from smallpox was reported from Metropolis.

Personal.—Dr. John W. Ovitz, Sycamore, has been appointed physician in charge of the county tuberculosis sanatorium.——Dr. Frank N. Davenport has been elected president of the medical staff of Lutheran Hospital, Moline; Dr. Clifford C. Ellis, vice president, and Dr. David B. Freeman, secretary.——Dr. Wesley Claude Runyon, assisting managing officer, Lincoln State School and Colony, has been transferred to a similar position in the state hospital at Alton, and Dr. Ola A. Kibler, on duty at the state hospital at Chicago, will be transferred to Lincoln.——Dr. George L. Prentice, assistant surgeon at the Soldiers' Home at Danville, has been transferred to the Milwaukee branch; according to the Danville *Commercial News*, five physicians at the Milwaukee branch of the Soldiers' Home have recently been dismissed for engaging in private practice.——Dr. Frank S. Whitman, 2d, has resigned as health officer of Belvidere.

Chicago

Society News.—Dr. Edwin J. Gardiner was elected president of the Chicago Ophthalmological Society, January 18; Dr. Dwight C. Orcut, vice president, and Dr. Robert H. Buck, secretary-treasurer.——The Chicago Heart Association held its annual meeting at the City Club, February 2, under the presidency of Dr. James B. Herrick; Dr. Hoyt E. Dearholt, executive secretary, Wisconsin Anti-Tuberculosis Association, spoke on "Heart Disease and Tuberculosis in a Public Health Campaign."

Personal.—Isidore S. Falk, Ph.D., assistant professor of hygiene and bacteriology, University of Chicago, has been appointed director of surveys of the Chicago Health Department, and will undertake a series of statistical researches.——Dr. Charles Philip Miller, Jr., of the Rockefeller Institute for Medical Research has been appointed assistant professor of medicine at the University of Chicago, and Dr. Chester M. Van Allen, assistant professor of surgery.——Dr. William T. Brown, superintendent, Valmora Sanitarium, Valmora, N. M., addressed the Physicians' Fellowship Club, February 5, at the Logan Square Masonic Temple, 2154 Kedzie Boulevard, at 9 o'clock.——Dr. William A. Evans, professor of public health, Northwestern University Medical School, Chicago, gave an address at Purdue University during the recent "health week," observed by the city of Lafayette and the university.

INDIANA

Society News.—Dr. Alfred S. Jaeger was elected president of the Indianapolis Medical Society, January 15; Drs. Harry L. Foreman and Lehman M. Dunning, vice presidents, and Dr. Lyman R. Pearson, secretary-treasurer, reelected.

Hospital Building Dedicated.—The Boehne Tuberculosis Hospital of Vanderburgh County dedicated a new $115,000 building, January 24, which increased the capacity of the hospital, forty-eight beds, and made the total capacity eighty beds. The old hospital building will be completely renovated and used for women and children. This hospital was opened in 1908 as the Boehne Camp, and was operated for sixteen years by the county tuberculosis association; it was taken over in 1924 as a county hospital and the name changed to the Boehne Hospital of Vanderburgh County. It has about 68 acres of land and several buildings. The superintendent is Dr. George E. Mills.

"Dr." Wright's License Revoked.—The state board of registration and examination revoked the license, Dec. 18, 1925, to practice in Indiana, which had been issued, Sept. 17, 1924, to a man in Fort Wayne under the name of John F. Wright. Investigation by the board is said to have revealed that the man from Fort Wayne is James F. Wright, "an illiterate and without occupation," and not John F. Wright, who died at Columbus in 1906. The Fort Wayne man is said to have claimed that his diploma and license had been destroyed in a fire, and the board, in view of having issued a license to John F. Wright in 1897 and having no record of his death, duplicated the license.

KANSAS

Personal.—Dr. Tracy R. Conklin, Abilene, has been reappointed county physician.——Dr. Elias W. Reed, Holton, has been appointed county physician to succeed Dr. Charles A. Wyatt——Dr. Herbert Atkins, Pratt, has been appointed county health officer.

Society News.—Dr. Otto Jason Dixon, Kansas City, Mo., addressed the Golden Belt Medical Society, Salina, January 7, on "Some Intracranial Complications Following Extracranial Infections."——The Stafford County Medical Society recently raised its annual dues from $5 to $6.——Dr. Earle G. Brown, secretary, state board of health, recently addressed the Stafford County Medical Society on "Cooperation."

KENTUCKY

Paducah's Baby Show.—The health department of Paducah gave an "open house" program at the Riverside Hospital, January 15-16, a special feature of which was the "baby show." Infants were given a physical examination, and twelve of the seventy-six entered were pronounced without physical defects, and from these one boy and one girl will be selected as the prize winners. Infant mortality in Paducah is said to be greater than it is in the state as a whole.

Funds for Crippled Children.—The Kentucky Crippled Children Commission has requested an appropriation by the legislature of $100,000 for the rehabilitation of crippled children in the state. The governor is said to have endorsed the appropriation. There are about 12,000 crippled children in Kentucky, according to a recent report of the commission, and only fifty-five of them are being treated in hospitals now; 571 are waiting to be admitted when facilities have been provided. The state gave the commission $10,000 last year, and the Kentucky Crippled Children's Society raised more than $30,000 by popular subscription. Since the inauguration of this campaign, the deformities of 204 have been corrected, some to a normal state; others have been greatly improved.

MAINE

Dr. Garrison Appointed Superintendent.—Dr. William M. Garrison, Bangor, has been selected superintendent, it is reported, of the new tuberculosis sanatorium of Belmont County, Ohio. The institution, which is being erected at St. Clairsville, is nearing completion.

MARYLAND

Surgical Association Formed.—At the dinner to Dr. Dean Lewis, January 23, when many Johns Hopkins graduates returned to welcome Dr. Lewis as chief surgeon of the hospital, the Johns Hopkins Surgical Association was formed. The purpose of the association is to bring back to the hospital, as frequently as possible, surgeons who graduate from Johns Hopkins, and to maintain contact with them when they are unable to return.

Memorial Meeting.—A memorial meeting for Dr. Samuel Taylor Darling, who was killed in an automobile accident, May 20, 1925, near Beirut, Syria, while on duty as a member of the League of Nations Malarial Commission, was held, January 17, at the School of Hygiene and Public Health, Johns Hopkins University; Dr. William H. Welch presided; addresses were made by Dr. Edgar B. Friedenwald, Dr. Frederick F. Russell, Dr. Wilson G. Smillie and Robert W. Hegner, Ph.D.

MICHIGAN

Warning.—Mr. Olaf Huseby is no longer an accredited agent of the American Medical Association. Our accredited agents carry credentials bearing an expiration date and the signature of Dr. Olin West, Secretary and General Manager of the Association. Mr. Huseby's credentials have expired.

Cancer Week.—Dr. Francis Carter Wood was the principal speaker during cancer week, January 21-29, held under the auspices of the Wayne County Medical Society and the Detroit Department of Health; Dr. Wood addressed the students at the University of Michigan and at the Detroit College of Medicine, and the public at the Federation of Women's Clubs, Detroit; he held a clinic for physicians at the Harper Hospital.

State Hospital Transfers.—Dr. Perry C. Robertson, superintendent of the Newberry State Hospital, has been transferred to the Ionia State Hospital, to succeed Dr. Robert H. Haskell, who has recently resigned to accept the superintendency of the new Wayne County Training School for Feebleminded Youths at Northville; Dr. Earl H. Campbell, superintendent of the Traverse City Hospital, has been transferred to Newberry to succeed Dr. Robertson, and Dr. George F. Inch, assistant superintendent of the Kalamazoo State Hospital, has been promoted to the superintendency of the Traverse City Hospital to succeed Dr. Campbell.

Society News.—Dr. Phil L. Marsh, associate professor of medicine, University of Michigan Medical School, Ann Arbor, addressed the Kent County Medical Society, Grand Rapids, January 27, on "The Diagnosis of Chronic Heart Disease." The president of the society for 1926 is Dr. John R. Rogers; the secretary-treasurer, Dr. Homer T. Clay.——Dr. Walter R. Campbell, Toronto, Canada, will address the Wayne County Medical Society, February 1, on "Acidosis, Coma and Infections in Diabetes Mellitus."——Dr. Udo J. Wile, professor of dermatology and syphilology, University of Michigan Medical School, Ann Arbor, will address the Medical Section of the Wayne County Medical Society, February 8, Detroit, on "The Wassermann-Fast Patient."

MISSOURI

Adcox Sentenced to Jail.—Dr. Robert Adcox and Sam Kaplan, medical diploma mill operators, were sentenced to thirty days in jail by the Supreme Court of the District of Columbia after they had pleaded guilty. Both Kaplan and Adcox had testified for the government in the trial of Helmuth P. Holler, president of the "Oriental University," Washington, D. C., who was convicted of selling diplomas.

Society News.—Dr. Herman E. Pearse, health commissioner, Kansas City, addressed the Kansas City Obstetrical Society, January 14, on "Problems of the Health Commissioner with Obstetrics."——Dr. Ernest Sachs addressed the St. Louis Medical Society, January 19, on "Radical Treatment of Trigeminal Neuralgia, with a Review of Seventy-One Operations Without a Death," and Dr. Edward Lee Dorsett on "Fetal Monstrosities—Their Relation to Dystocia—Personal Collected Cases" (lantern slides).——Dr. John J. R. Macleod, associate dean and professor of physiology of the Faculty of Medicine of the University of Toronto, Canada, addressed the Kansas City Academy of Medicine at the annual banquet, February 5.——Members of the Jackson County and Wyandotte County Medical societies have been invited to the home of Dr. G. Wilse Robinson, Kansas City, February 11, to a buffet supper.——Dr. Walter A. Gekler, Albuquerque, N. M., addressed the St. Louis Medical Society, January 26, on "Tuberculosis East and West."

NEW JERSEY

Society News.—Dr. Livingston Farrand, president of Cornell University, Ithaca, N. Y., addressed the Essex County Medical Society, Newark, recently, on "The Responsibilities of the Medical Profession to the Community."—Dr. Nellis B. Foster, associate professor of medicine, Cornell University Medical College, New York, addressed the Hudson County Medical Society, Jersey City, Dec. 1, 1925, on "Treatment of Graves' Disease."——Dr. Lucius F. Donohoe, president, and Dr. J. Bennett Morrison, secretary of the Medical Society of New Jersey, and Dr. Henry O. Reike, editor of the state medical journal, addressed the one hundred and ninth annual meeting of the Monmouth County Medical Society, Monmouth, Dec. 16, 1925.——Dr. Oswald S. Lowsley, New York, recently addressed the Passaic County Medical Society, Paterson, on "A New Phase of Surgery of the Genito-Urinary Tract with Moving Pictures and Animated Film Demonstrations."

Chiropractors in Court.—The secretary of the state board of medical examiners reports that the following chiropractors have been tried for practicing medicine without a license:

Louis Koomos, Oradell, pleaded guilty, Nov. 10, 1925, in the East Rutherford District Court and paid the penalty and costs.

Ada E. Blaisdell, Vineland, pleaded guilty, Nov. 20, 1925, in the Court of Common Pleas, Bridgeton, and paid the penalty and costs.

Algia Burroughs and Phillip Tremmel, Newark, pleaded guilty, Dec. 1, 1925, in the First District Court of Newark and paid the penalty.

Stanley I. Guzowski, Trenton, pleaded guilty, Dec. 9, 1925, in the District Court of Trenton and paid the penalty and costs.

Dagmar S. Ackerman, Paterson, and Alex Vekony, Passaic, were each tried in the Passaic District Court, Dec. 11, 1925. Judgment was entered for the penalty and costs.

Clarence Drake, who practiced in Morrison, and his wife, Mary Drake, who practiced in Dover, pleaded guilty in the Morristown District Court, Dec. 14, 1925, and each paid the penalty.

Louis Turner, East Orange, was tried, Dec. 22, 1925. He paid the penalty and costs.

Max Blindt, Newark, pleaded guilty, Dec. 23, 1925, and paid the penalty and costs.

NEW YORK

Veteran Practitioners Honored.—The Suffolk County Medical Society gave a dinner at the Country Club, Riverhead, recently in honor of Dr. Edwin S. Moore, Bay Shore, and Dr. Clarence C. Miles, Greenport, who have been in the practice of medicine for fifty years. Dr. William A. Hulse presided, and among the speakers were Dr. Frank Overton, Patchogue, Dr. William H. Ross, Brentwood, Dr. Albert E. Payne, Riverhead, Rev. W. R. Watson, Bay Shore, and the two honored guests.

Health Officers and Districts.—There are 1,307 health districts in the state of New York, 164 fewer than there were ten years ago; the town of Bangor and the village of North Bangor in Franklin County were consolidated in one health district, January 7, and Dr. Florence W. McCarthy continues as health officer; on the same day, the town of Amherst and the village of Williamsville in Erie County also consolidated, and Dr. Myron M. Metz continues as health officer. There are 950 health officers in the state, exclusive of New York City.

Midwife Goes to Prison.—Marie Barresi, a native of Italy, was recently sentenced to one year in the New York State Prison for Women by Judge Hazard of Oneida County for committing a "serious offense against the state." New York *Health News* states that Madam Barresi was licensed by the state commissioner of health to practice midwifery in 1920, and that the renewal of her license in 1921 was refused on account of irregularities in her practice; although not licensed since 1922, she has continued to practice in Utica and during that time has been convicted of misdemeanor three times. Action may be taken when she is out of prison to deport her to Italy.

New York City

Associations Merge.—Dr. Haven Emerson, president, New York Heart Association, announces that the association voted, January 19, to merge with the New York Tuberculosis and Health Association; the latter organization will at once organize a special committee on heart diseases, and will actively carry on the work of prevention in this field. Dr. Emerson considers this a step forward and decidedly in the interest of public health.

Hospital News.—The Italian Medical Society, Brooklyn, will give a dinner, February 8, at the Hotel Bossert, at which it hopes to raise $300,000 for a local Italian hospital. Another fund will also be started for $100,000 to equip the main building.——Subscriptions for the Brooklyn Jewish Hospital amounting to $250,000 were given, January 16, at a dinner, completing a fund of $1,500,000, which insures the erection of a new wing and other additions.

Mayor Addresses Physicians.—A public meeting at the Town Hall, January 28, comprising, among others, about 1,500 physicians of the city, was addressed by Mayor Walker, Dr. Louis I. Harris, health commissioner, and Dr. Wendell C. Phillips, President-Elect of the American Medical Association. The addresses concerned the health of the city, its gratuitous medical service through private and allied hospitals, and the proposed national home for aged and incapacitated physicians.

Society News.—Dr. Jerome Kingsbury has been elected president of the West Side Clinical Society for 1926, and Dr. William B. Giles, secretary.——Dr. Julian W. Brandeis has been elected president of the New York Physicians Association for 1926; Drs. Joseph Ziporkes and Maurice O. Magid, vice presidents; Dr. Aaron Brown, treasurer, and James W. Smith, secretary.——Dr. Jacques Forestier, Paris, France, will address the New York Academy of Medicine, February 8, at 8:30 o'clock, on "Radiologic Exploration with Iodized Oil (Lipiodol)"; Dr. Harold E. B. Pardee addressed the academy, February 4, on "The Use of Digitalis in the Treatment of Children with Heart Disease."——Mr. H. Clyde Snook of the Bell Telephone Laboratories addressed the New York Electrical Society, February 3, on "Electrically Amplified Heart Beats," and phonographic records of the heart made under the direction of Dr. Richard C. Cabot of Harvard University Medical School, also the audiometer, were demonstrated and explained.

NORTH CAROLINA

Joint Meeting with Dentists.—The Raleigh Dental Society and the Raleigh Academy of Medicine were entertained at dinner by Dr. John B. Wright, recently, and were addressed by Dr. Clyde E. McDannald, New York, on "Relation of Impacted and Infected Teeth to Eye Disease," and by Guy R. Harrison, D.D.S., Richmond, Va., on "Dental Problems of Interest to Physicians."

Personal.—Dr. William R. Goley, Graham, major, medical reserve corps, has been placed in command of the medical detachment of the One Hundred and Twentieth Infantry.——More than forty physicians attended a dinner given by Dr. Alonzo H. Myers, recently, in honor of Dr. Watson S. Rankin, who has established headquarters in Charlotte for his work in connection with the Duke Foundation.——Dr. John H. Tucker has been elected president of the staff for 1926 of St. Peter's Hospital, Charlotte; Dr. William M. Strong, vice president, and Dr. Lucius G. Gage, secretary-treasurer.

OHIO

New Health Commissioners.—Dr. Charles H. York has been named health commissioner for Columbiana County, succeeding Dr. Thomas T. Church, Salem; Dr. Frederick H. Stires, Malvern, health officer for Carroll County; Dr. Walter C. Corey, Chardon, for Geauga County; Dr. Edward J. Schwartz, Painesville, for Lake County; Dr. Forrest R. Stewart, Waterloo, for Lawrence County, and Dr. Melville D. Ailes, Sidney, for that city and the Shelby County District.

Tuberculosis Institute.—In cooperation with the Ohio State University, the National Tuberculosis Association will conduct a regional institute for tuberculosis and health workers at Columbus, March 15-27, under the direction of Philip P. Jacobs, Ph.D.; only thirty persons can be accommodated at the institute; a small entrance fee will be charged. It will be open to health commissioners, tuberculosis workers and nurses. A similar institute will be held in Chicago.

PENNSYLVANIA

Decline in Death Rate.—The death rate in Pittsburgh dropped from 15.2 in 1924 to 14.7 per thousand population in 1925. There were 1,688 deaths from pneumonia last year, which is the lowest number for the last six years.

Board of Health Removed from Office.—The new city council of Pottsville passed an ordinance, January 12, abolishing the old board of health, and removing its appointees. According to the Pottsville *Journal*, the council then proceeded to reorganize the board, electing Dr. Henry A. Dirschedl president of the board, and H. J. Herbein, D.D.S., secretary to succeed himself. The president of the previous board was Dr. Hamilton C. Wallace.

Public Health Association Meeting.—The second annual meeting of the Pennsylvania Public Health Association will be held at the County Medical Society Building, Twenty-First and Spruce Streets, Philadelphia, February 16-17, Dr. Charles H. Miner presiding. Among others Dr. B. K. Wilbur, president, Lower Merion Township Board of Health, Philadelphia, will speak on "A Successful Experiment in Milk Control"; Dr. Carey J. Vaux, health commissioner of Pittsburgh, on "What Is Being Done by City Health Officers"; Dr. Samuel S. Woody, director, Philadelphia Hospital for Contagious Diseases, on "Present Status of Serum Therapy in Scarlet Fever"; Prof. Charles E.-A. Winslow, president American Public Health Association, on "General Public Health," and Dr. Emery R. Hayhurst, Columbus, Ohio, on "The Factory and Public Health."

Philadelphia

Millions for Charity.—The Federation of Jewish Charities announced at a dinner in Philadelphia that $4,404,000 was pledged in the building campaign which closed with that occasion. The funds will be used to erect eleven buildings for charitable, religious and educational work, and to pay off mortgages on some of the federation's institutions; the amount pledged was $900,000 more than the goal.

Increase in Death Rate.—The Department of Health of Philadelphia reports, according to the Philadelphia *Ledger*, that the death rate of the city in 1925 was 13.16 per thousand population, as compared with a rate of 12.95 in 1924. There were, it is said, 4,596 deaths from heart disease, and 3,901 in 1924; 1,500 deaths from pneumonia, and 1,650 in 1924; 1,781 deaths from tuberculosis of the lungs, and 1,777 in 1924; forty-five deaths from typhoid fever, and forty-one in 1924; seventy-six deaths from measles, and twenty-nine in 1924; seventy-five deaths from scarlet fever, and forty-two in 1924.

Society News.—Dr. Jay F. Schamberg addressed the section on medical history of the College of Physicians of Philadelphia, January 19, on "The Ravages of Smallpox Among Royal Families of Europe" illustrated by lantern slides.——The presidential address of Dr. Sherman F. Gilpin before the iladelphia Neurological Society was delivered, January 22; e subject was "The Relation of Trauma to Neuropsychiatric onditions as Observed in a Compensation Court."——Dr. Anthony J. Lanza, assistant medical director, Metropolitan Life Insurance Company, addressed the Section on Public Health and Industrial Medicine of the College of Physicians of Philadelphia, January 22, on "Industrial Hygiene," and Dr. L. R. Thompson, U. S. Public Health Service, on "Industrial Morbidity Statistics."——Dr. Hugh Cabot, dean and professor of surgery, University of Michigan Medical School, Ann Arbor, addressed the Philadelphia Urological Society, January 25, on "The Application of the Doctrine of Prepared Soil to Renal Infections."

TEXAS

Personal.—Dr. Dewitt T. Smith, Dallas, has been appointed medical director of the Southwestern Life Insurance Company. ——Dr. Aubrey O. Hampton has been appointed city physician of Fort Worth.

Society News.—The Tri-State Medical Society of Louisiana Arkansas and Texas met at Marshall, January 20-21, with an attendance of 186. Dr. Frank S. Littlejohn, Marshall, was elected president; Drs. J. Garnett Yearwood, Gayle, La., Archibald E. Chace, Texarkana, Ark., and James A. Daniels, Carthage, Texas, vice presidents; and Dr. Frank H. Walke, Shreveport, La., secretary; Dr. Walke has been elected to that position for the tenth consecutive year. The next meeting will be in Texarkana. The Harrison County Medical Society tendered a banquet to the Tri-State Society members, January 20.

Death Registration Campaign.—A state-wide birth and eath registration campaign to cover several months is being lanned by the state board of health. There is some hope at Texas will be admitted to the registration area this ear; about 74 per cent of the births were reported, and a arger percentage of deaths were reported in 1925. A special gent of the Bureau of the Census was in Texas recently, onferring about plans for conducting a registration test ithin the next six months. Everybody is requested to ooperate in this effort to place Texas in the registration area. here are thirty-nine states now in the death registration rea and thirty-one in the birth registration area.

VERMONT

Dr. Tinkham's Will.—The will of the late Dr. Henry Crain Tinkham, dean of the University of Vermont College of Medicine, Burlington, provides for establishing one or more scholarships in the college to be known as the Dr. H. C. Tinkham scholarships; Dr. Tinkham also gave his medical library to the college, and his surgical instruments to the Mary Fletcher Hospital. Except for two legacies, the use of the remainder of the estate is given to the widow during her lifetime, and at her death is to be divided among relatives, the Orleans Historical Society and the Delta Mu Fraternity for the purpose of securing a permanent home (The Journal, January 2, page 54).

WISCONSIN

Personal.—Dr. Royal C. Rodecker, Holcombe, has been appointed a member of the state board of medical examiners, and will succeed his father, Dr. Charles W. Rodecker, who resigned.

New Medical School.—The regents of the University of Wisconsin have issued instructions, it is reported, to prepare plans to expend about $1,500,000 on a new building and equipment for the University of Wisconsin Medical School; the first unit will cost about $450,000; bids will be issued by July 1.

Radiologists Meet in Milwaukee.—The executive committee of the Radiological Society of North America has chosen Milwaukee for the meeting place of the next annual convention, in November. The convention will last about a week, and, the secretary of the Milwaukee County Radiological Society, says, will bring about 1,500 roentgenologists to the city.

CANADA

Fellowship Awarded to Professor Krogh.—The Faculty of Medicine of the University of Toronto has awarded the Charles Mickle Fellowship for 1924 to Dr. August Krogh, professor of animal physiology, University of Copenhagen, "on account of the far reaching conclusions with regard to capillary circulation and the oxygen supply of the tissues which have been the outcome of his researches during the last ten years." Dr. John J. R. Macleod, chairman of the committee of fellowships and scholarships, University of Toronto, writes that this fellowship is awarded annually to that member of the medical profession who is considered by the Faculty of Medicine of the University of Toronto to have done most during the preceding ten years to advance sound knowledge of a practical kind in a medical art or science. The value of the prize is about $1,300; previous awards have been made to Sir James Mackenzie, Dr. Frederick G. Banting, Dr. Harvey Cushing and Prof. I. P. Pawlow.

GENERAL

Death of Dr. Kellner.—Dr. G. A. Herman Kellner, organizer and head of the scientific bureau of the Bausch and Lomb Optical Company, died at his home in Rochester, N. Y., January 28. Dr. Kellner's death deprives the optical industry of America of one of its outstanding personalities.

Typhoid Increase Forty-Five Per Cent.—Preliminary reports of the number of cases of typhoid throughout the country for the first eleven months of 1925 show an increase of 45 per cent compared with the same period for 1924, the total number of cases being 40,015 and 27,531, respectively, according to the U. S. Public Health Service. The increase is noted in all groups of states, except New England and the Pacific Coast, and is explained, in part, by the fact that certain state health departments made more complete reports. Nevertheless, the fact is that during 1925 there was a very large increase in the typhoid incidence.

American Association for Medical Progress.—President Clarence C. Little of the University of Michigan, Ann Arbor, has accepted the chairmanship of the lay advisory board of the American Association for Medical Progress, and Mr. Peter Kasius, for several years assistant director of educational work, U. S. Public Health Service, has resigned that position to become field secretary of this association, which is planning an extended program for the coming year. The American Association for Medical Progress is a national lay organization for popular education on the scientific foundations of modern medical practice and public health work.

Bill to Establish Bureau of Medical Research.—Representative Woodruff of Michigan has introduced a bill in the house of representatives which would establish, in the department of the interior, a bureau of medical research, the function of which would be to investigate physiologic processes; to devise means for controlling the bodily processes, and to determine the physical, chemical and biologic properties of materials where this would be advantageous to medical science. The bill provides for a director of the bureau, to be appointed by the President at a salary of $15,000, an assistant director at $10,000, and such other employees as the director should decide, these appointments to be made under civil service rules. There would be also a visiting committee of five prominent members of scientific societies, not in the employ of the government, to serve without compensation. Mr. Woodruff's bill would authorize the director to negotiate for not more than 100 acres of land near the city of Washington at not more than $2,000 an acre, and to draw plans for suitable buildings to cost not more than $1,000,000. The director of the bureau of medical research, according to this bill, shall make plans and submit estimates to the director of the budget on a basis of spending about $550,000 in 1927.

Sheppard-Towner Act May Be Continued in Force.—Bills have been introduced into the Senate and House of Representatives to postpone the expiration of the Sheppard-Towner Act for two years, until June 30, 1929. Unless this legislation is passed, the act will expire, June 30, 1927, because of a limitation embodied in it. The House bill was introduced by Representative Parker, January 13, and on the following day the Committee on Interstate and Foreign Commerce, to which the bill had been referred, held a hearing on it. Senator Phipps introduced the bill into the Senate, "by request," January 23, and it is now before the Senate Committee on Education and Labor. The introduction of a bill "by request" is usually construed to mean that the senator or representative introducing it has an open mind on the subject matter of the bill and reserves the right to vote for or against it. It is reported that the proponents of these bills, at whose instance they have been introduced, admit the absence of evidence now to justify the permanent enactment of legislation patterned after the Sheppard-Towner scheme, but claim that they will be able to produce such evidence if given two more years of power. To carry the Sheppard-Towner Act into effect costs the federal government approximately $1,240,000 a year, and costs the state governments taken as a whole something less than a million dollars a year.

News of Epidemics.—An outbreak of about 150 cases of an intestinal disorder suddenly occurred at the state normal school, Trenton, N. J., about January 12. The state health director, who was then investigating the epidemic, is reported to have said that an examination of the food and water failed to reveal the cause.——There had been 528 cases of measles reported in Oswego, N. Y., January 18, in the present epidemic, of which 146 were then still under quarantine.——All the twenty-one beds in the detention hospital, Hibbing, Minn., were occupied by scarlet fever patients, January 20, and this is said to have been the first time since the influenza epidemic of 1918 that cases of the same disease have completely filled the hospital. There were said to be more than forty cases in the city, and a smaller number in the surrounding community. ——There were 2,250 persons in Cleveland under quarantine for measles, January 2. There are said to have been twelve deaths from measles in Cleveland since the first of the year. ——About 25 per cent of the pupils enrolled in the schools of Patterson, Calif., were absent during the week ending January 16, it is reported, on account of an epidemic of influenza.——The State Industrial School for Boys, Denver, was placed under quarantine, January 18, as a result of nine "light" cases of scarlet fever developing in the institution. ——The Leaf River High School and the district school at Myrtle, Ind., were ordered closed, January 25, by health authorities on account of an outbreak of scarlet fever.—— Newspaper reports state that smallpox is spreading throughout the Primora and Spassky districts in Siberia, where there had been 216 deaths up to January 15.

New County Society Presidents.—The following physicians have recently been elected president of the county medical societies indicated:

Dr. Samuel T. Bell, Alpena, Mich., Alpena County Medical Society (reelected).

Dr. J. William Blasdell, Ballinger, Texas, Runnels County Medical Society.

Dr. William T. Booher, Wellsburg, W. Va., Brooke County Medical Society.

Dr. William F. Boyers, Fairmont, W. Va., Marion County Medical Society.

Dr. Clarence T. Bradford, Commerce, Texas, Hunt County Medical Society.

Dr. Harvey Brown, Freehold, N. J., Monmouth County Medical Society.

Dr. Nial L. Burrell, Springfield, Ohio, Clark County Medical Society.

Dr. Robert T. Canon, Lufkin, Texas, Angelina County Medical Society.

Dr. T. Homer Coffen, Portland, Ore., Portland City and County Medical Society.

Dr. Allan T. Coffman, Marshall, Mo., Saline County Medical Society.

Dr. John B. Comfort, Trenton, N. J., Mercer County Medical Society.

Dr. Louis Fauerbach, Madison, Wis., Dane County Medical Society.

Dr. Victor J. Gangewere, Allentown, Pa., Lehigh County Medical Society.

Dr. Lloyd D. Gass, Klamath Falls, Ore., Klamath and Lake Counties Medical Society.

Dr. Fabian J. Gosin, Green Bay, Wis., Brown-Kewanee County Medical Society.

Dr. Thomas R. Griffin, St. Petersburg, Fla., Pinellas County Medical Society.

Dr. James C. Hayes, Medford, Ore., Jackson County Medical Society.

Dr. Matthew J. L. Hoye, Meridian, Miss., Lauderdale County Medical Society.

Dr. Lauritz A. Larsen, Colfax, Wis., Chippewa County Medical Society.

Dr. William J. Lowis, Colby, Kan., Decatur-Norton County Medical Society.

Dr. Howard Mellor, Sconnelltown, Pa., Chester County Medical Society.

Dr. John L. Moorhead, Neodesha, Kan., Wilson County Medical Society.

Dr. James C. Norris, Augusta, Ky., Bracken County Medical Society.

Dr. Emory R. Park, La Grange, Ga., Troup County Medical Society.

Dr. David H. Rowe, Washington C. H., Ohio, Fayette County Medical Society.

Department of Agriculture Surveys Rural Hospitals.—In a report of investigation of hospitals in farming communities, the U. S. Department of Agriculture says that not more than 12 per cent of the rural population of this country has modern health supervision. The establishing of rural hospitals has been checked by increase in building costs and the necessity for economy in local government. Credit is given to Washington County, Iowa, for the initial step in the rural hospital movement; Iowa in 1909 was the first state to enact a law which authorized counties to tax themselves to build hospitals, and Washington County proceeded at once to erect a hospital; prior to that, thirty-two counties in Iowa had not one hospital bed; since then, sixteen other states have passed laws similar to the Iowa law, and many rural hospitals have been built. In this study, the department of commerce investigated forty rural hospitals, and found that those hospitals in which the people have a direct interest, are usually most satisfactory. At Berea, Ohio, there is a district hospital established by communities in two counties, and in this district there are six distinct political subdivisions; the building cost $110,000. At Hutchinson, Minn., a community hospital has been built by public subscription. It is said that a la[illegible]s-proportion of the 750,000 women who annually give birth [illegible]st, children in the United States without medical attention li[illegible] on farms. The report urges farming communities not to sacrifice health for economy; a hospital in a rural community attracts a better class of physicians to that locality. In a Montana county of 5,000 square miles, there were no hospitals and only three physicians in 1924, in Minnesota, 127 villages were reported to be without physicians; similar conditions exist in the Dakotas, and forty counties in Kentucky were without adequate medical service, one of which did not have a physician.

LATIN AMERICA

Society Elections.—At the annual meeting in Rio de Janeiro of the Brazilian Society for Neurology, Psychiatry and Legal Medicine, Dr. Juliano Moreira was elected president; Drs. J. Marinho and P. Olinto, vice presidents; W. de Almeida, general secretary; W. Pires, first secretary; C. Lopez, H. Povoa and Lopez Rodriguez, second secretaries, and A. Botelho, treasurer.

The American Child Welfare Institute.—Dr. L. Morquio describes in the *Archivos Latino-Americanos de Pediatria* the plans for the organization of the Pan-American Child Welfare Institute. It is to be located at Montevideo as headquarters of the American International Bureau for Protection of the Child, as voted at the fourth American Child Welfare Congress, held in Chile in 1924. The international board of directors will have its headquarters at Montevideo, and will apportion to the different countries the amount each shall pay, and elect the director. It is planned to publish a bulletin. The next Child Welfare Congress is to convene at Havana in December, 1926. Dr. Morquio was commissioned by the second Child Welfare Congress to draw up plans for the undertaking, and later was appointed honorary director pro tem.

FOREIGN

Number of Medical Missionaries.—According to the board of foreign missions of the Presbyterian Church, the number of medical missionaries in the field from the United States and British Empire is as follows:

	Africa	*China* Japan	India	*Near* East	*East* Indies	*South* America	Totals
Great Britain	55	174	160	64	4	3	460
United States	33	276	118	40	25	6	498
Canada	..	31	16	..	..	1	48
Australia and New Zealand	..	4	4	..	..	..	8
	88	485	298	104	29	10	1,014

Prizes of French Academy of Medicine.—The Académie de médecine had fifty-two prizes to distribute, but there was no competition for some and no worthy articles were received for others, so that only twenty-four prizes were distributed. Only one went outside France; it was divided between Dr. J. Vassal for his campaign against trypanosomiasis in Africa, and Drs. A. Bigot and H. Velu for their research on blastomycosis in animals and man. The Prince of Monaco prize of 100,000 francs was divided between Prof. E. Hedon, Montpellier, physiologist, and Prof. E. Laguesse, Lille, histologist, for their thirty years of persevering research on the pancreas which preceded, prepared and rendered possible the isolation of insulin. Laguesse first demonstrated that the islands of Langerhans represented the endocrine gland of the pancreas. The Audiffred prize "for a sovereign remedy for tuberculosis" was not awarded.

Deaths in Other Countries

Gen. E. Damianovich, Buenos Aires, of the medical staff of the Argentine army, aged 82.——**Dr. Louis Mégevand**, professor of legal medicine, Geneva, aged 65.——**Dr. G. Maunoury**, Chartres, member of the lower house from his province and ex-president of the French Surgical Society, aged 76.——**Dame Louisa B. Aldrich-Blake**, dean of the London School of Medicine for Women, consulting surgeon to the Royal Free Hospital and for women patients at the Herbert Hospital, Woolwich, formerly vice president of the section of obstetrics and gynecology, British Medical Association, Dame commander in the order of the British Empire; Dec. 28, 1925, at Nottingham Place, Marylebone, England. ——**Richard Caton**, emeritus professor of physiology and consulting physician, Royal Infirmary, Liverpool, chosen in 1907 Lord Mayor of Liverpool, aged 83.——**John Gray McKendrick**, emeritus professor of physiology, Glasgow, author of a textbook of physiology, and a frequent contributor to scientific journals, January 2, aged 84.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 9, 1926.

Dame Louisa Aldrich-Blake

Dame Louisa Aldrich-Blake, a woman surgeon, has died at the age of 60. Her professional distinction and her work in the war gave her a special place in the medical world. Her career as a student at the University of London, where she was the first woman to obtain the degree of Master of Surgery, was distinguished. Entering the Royal Free Hospital (London School of Medicine for Women), she took the London M.B. in 1892 with first-class honors in medicine and obstetric medicine; the B.S. in 1893, with first-class honors in surgery and qualifying for the gold medal; the M.D. in 1894, and M.S. in 1895. She joined the staff of the Royal Free Hospital as surgical registrar and anesthetist, and was afterward house surgeon, clinical assistant, senior assistant to outpatients, and surgeon to the New Hospital for Women (Elizabeth Garrett Anderson Hospital). As dean of the London School of Medicine for Women, she exercised an influence on generations of women medical students. She was also one of the first medical women to practice general surgery. She contributed an article on "Pain as a Symptom of Pelvic Trouble" to the "Practical Encyclopaedia of Midwivery and Diseases of Women." On the outbreak of the war, she immediately helped to collect stores and equipment for a group of medical women prepared to go to Brussels. The rapid advance of the Germans prevented the establishment of a hospital there, and in the autumn the unit began work at Chateau Tourlaville, near Cherbourg, whither numbers of Belgian and French sick and wounded soldiers were being brought by sea. She worked at this hospital during the Christmas vacation of 1914. In August and September, 1915, she went out under the Anglo-French Red Cross to the hospital at Royaumont for French soldiers under the charge of Miss Ivens, M.S., and a staff of British medical women and nurses. She relieved Miss Ivens of a good deal of operating work, and this service she repeated in August and September, 1916. In the spring of 1916, when medical women were welcomed for service with the Royal Army Medical Corps in various places, she circularized all the women on the Medical Register and enlisted eighty, who were sent to hospitals in Malta, Egypt and Saloniki. In October, 1916, she was informed at the war office that at least fifty more medical women were wanted for service in hospitals in England, and she secured large numbers of the younger graduates.

The "Heart" of the Plant: Sir J. C. Bose's Latest Discoveries

Sir Jagadis Chandra Bose, F.R.S., the Indian scientist, has announced at Calcutta the second of three remarkable discoveries he has recently made with regard to plant life, and given a demonstration of the "heart beats" of plants with delicate instruments that he has invented. Thirty-two years ago he began his researches. He found that inorganic substances exhibited fatigue similar to the fatigue of animal muscles, and that the fatigue in both was removed after a period of rest. This led him to investigate the characteristics of the simpler forms of life, as shown by plants. After long researches he was able to prove what he was convinced of before—that the life mechanism of the plant is identical with that of the animal. He discovered how plants may be shown to respond to stimuli, and arrived at the following conclusions, which he demonstrated on the eighth birthday of the institute in Calcutta which bears his name: The plant possesses a highly differentiated nervous system, which can be proved by throbbing pulsations, which take the place of the heart beat of the animal and which show violent spasm exhibited at the crisis of death. By his optical lever he was able to demonstrate the activity of the cells of the plant in the propulsion of sap from the roots of the tree to the topmost leaves, thus solving a problem that had baffled inquiry for 200 years. The location of the heart of the plant was made by means of an electric probe in circuit with a sensitive galvanometer. Bose introduced the probe step by step across the stem; as soon as it came into contact with the pulsating layer, an electric response was received and recorded by the galvanograph. Each active cell during its phase of expansion absorbs water from below, and expels it upward during the phase of the contraction. Bose likens the heart of the plant to the elongated heart of some of the lower animals, such as the earthworm, in which peristaltic action propels the circulating fluid. To measure the heart beat of the plant, which is less than a millionth of an inch, it was necessary for it to be enormously magnified, which is done by Bose's magnetic amplifier. A mirror is attached to the astatic magnetic system, the reflected beam being thrown on a screen or photographed on a film. All this Bose performed before his audience, which was able to see how chloroform, for instance, at first immensely excited the plant, stimulating it to great vigor. Then came the death spasm. Rapidly and spasmodically the beam of light fell until it came to rest, indicating that the plant had died.

The Bose Institute, which lies in the center of one of the busiest industrial quarters of Calcutta, is a beautifully designed building in Indian style. It consists of a large and acoustically perfect lecture or demonstration room, with numerous laboratories. Bose's great pride is that his institute is entirely Indian, in inspiration, in personnel, in architecture, and in craftmanship. On one side of a quiet garden quadrangle, a new building is rapidly appearing. It is designed to be the first of a series of hostels which Bose proposes to erect for his students. These hostels, designed in typically Eastern style, are intended to house students from all over the world, whom it is the ambition of the founder to attract to Calcutta. It is probable that Bose will spend a considerable portion of next year in Europe. He has invitations to lecture at the Sorbonne and in Berlin.

Measles Epidemic in London

A serious epidemic of measles is raging in London. The percentage of young people affected in a number of districts is high. There have been 115 deaths from measles in London in four weeks, out of 221 in the seventy large cities.

Educative Campaign as to the Care of the Teeth

The dental board of the United Kingdom, which acts under the authority of the privy council and which occupies toward dental surgeons a position similar to that of the general medical council in regard to physicians, has been so greatly impressed with the evil effects on the health of the nation arising from the bad state of the teeth of the public at large, the ignorance and apathy among parents in regard to the necessity for the proper care of their children's teeth, and the lack of facilities for preventive dentistry, that it has determined to carry out a campaign with a view to educating the public in the importance of oral hygiene and strengthening the hands of those public bodies responsible for the health of the country. The board proposes to cooperate with existing associations and societies interested in the welfare of the community, and is prepared to provide lectures, cinema films, lantern slides and literature. A circular has already been prepared, pointing out that a sound and clean set of teeth is essential to health and to the appearance of an individual. The information is given that if the first teeth are diseased the permanent teeth will almost certainly also be diseased.

Starchy foods, such as bread and potatoes, are incriminated as being the cause of the first stage of the decay of the teeth. The practical hints are given that the cleansing of the teeth is especially necessary at night, and that the tooth brush should be moved upward and downward. Hard crusts should be given to babies of 18 months, as these clean the teeth and help the growth of the jaws.

PARIS

(From Our Regular Correspondent)

Jan. 18, 1926.

Léon Bourgeois and His Antituberculosis Campaign

The managerial council of the Comité national de défense contre la tuberculose met a few weeks ago at the Ecole des infirmières visiteuses, under the chairmanship of Professor Calmette. The meeting was devoted chiefly to honoring the memory of Léon Bourgeois, recently deceased. Léon Bourgeois devoted his life to the realization of two compelling ideas, arbitration among the nations of the world and mutual fellowship among all mankind. There is scarcely a social movement the organizers of which have not had recourse to his advice, whether it concerned the organization of labor, amelioration of the housing situation, infant welfare, or the crusade against syphilis, alcoholism and particularly tuberculosis. To him more than to any one else we owe the organization of the antituberculosis movement, which is now functioning with full force. The work accomplished by this movement has been recently outlined by G. Poix, editor-in-chief of the *Revue de phtisiologie médico-sociale*.

The crusade against tuberculosis that Léon Bourgeois preached began with the creation, in 1903, of the permanent commission to combat tuberculosis, which was appointed by the government to determine the administrative and legislative measures that should be adopted to prevent the extension of the disease. To the work of this commission Bourgeois contributed indefatigably. He realized that the main effort of the campaign should be directed toward prophylaxis, and that curative treatment of patients should be secondary. He pointed out that the state, the departments and the communes should assume the duty of assisting the tuberculous, of protecting healthy individuals against the tubercle bacillus, the direct cause of the disease, and also against the indirect causes, such as ignorance in matters of hygiene, bad conditions of work, unhealthy dwellings and insufficient food. Bourgeois emphasized the features of the work that were particularly urgent: the medical inspection of schools, sanitary measures applicable to dwellings, and the prophylaxis of tuberculosis in government administrations.

When Bourgeois became a member of the supervisory council of the Assistance publique, he undertook a campaign in favor of the isolation of tuberculous persons in hospitals and the creation of special services for their accommodation. He explained to the supervisory council the need of creating various groups or societies all acting together under a common head. He recommended the establishment of a special dispensary for the examination of tuberculosis suspects, and where those who could be safely cared for at home could be followed up and counseled. He suggested further the creation of a special hospital service to which could be admitted such patients as could not safely be cared for at home or in a Paris hospital. Such a service could be annexed to the dispensary, after the manner of a suburban hospital-sanatorium.

Bourgeois requested the immediate introduction of what he termed "the Laënnec group"; that is to say, the creation of a dispensary to be connected with the Laënnec Hospital, and a special service of 250 beds for tuberculous patients in the hospital itself. Bourgeois' program resulted in the creation of the Léon Bourgeois dispensary and of two special services for tuberculous patients, connected with the Laënnec Hospital and under the direction of Léon Bernard and Rist, respectively, the whole constituting the chief examination center in Paris for tuberculosis suspects. Other similar institutions were established, and thus was organized the far-reaching antituberculosis movement carried out by the Assistance publique de la Seine, during the last twenty years.

Then came the war. The inadequate medical examinations led to the mobilization of many tuberculous persons, whom, later, it was necessary to dismiss from the service. These men received no pension, and, deprived of assistance and entirely ignorant of hygiene, they became a source of contagion. Their plight and the menace they were to others aroused the interest of Landouzy (among others), who addressed the permanent commission with a cry of alarm in favor of those whom he termed "the lung wounded." He communicated his anxiety to Léon Bourgeois, who aided him with all the weight of his authority and influence, and, through the combined efforts of these two men, the first steps were taken toward providing the needed assistance. Parliament, through the initiative of M. André Honnorat, voted an appropriation of 2,000,000 francs for the aid of military men dismissed from the service on account of tuberculosis, and, in a few months, through the activities of Brisac and Léon Bernard, the so-called sanitary stations were established, where tuberculous discharged men were received, cared for and given the necessary prophylactic education.

In the chief city of each department a committee was appointed to take charge of soldiers discharged from the service for tuberculosis, with a view to providing them with all forms of assistance needed, whether financial, moral or educational.

The committees made use of the visiting nurses, for the training of whom a special school was opened. A central committee was created at Paris, composed of members of the permanent tuberculosis commission and other leading men of Paris. Léon Bourgeois became the president and the pivotal force of the central committee. He prophesied that, while the ranks of the army fighting tuberculosis were at present thin and hastily thrown together, after the war there would be a more powerful organization, which would not confine its activities to the discharged soldiers but would include the whole civilian population, and his prophecy has been realized.

While the departmental committees were being organized, a law was passed in April, 1916, termed "Loi Léon Bourgeois," providing for the establishment of dispensaries of social hygiene and antituberculosis prophylaxis. Thus began the development in France of the essential institutions of which Calmette had been the inaugurator.

After the war, the central committee adopted the name of Comité national de défense contre la tuberculose and extended its activities so as to include the civilian population. The Comité national strengthened its position by its collaboration with the Rockefeller Mission, the experience of which, gained during its five years of munificent service throughout France, proved exceedingly valuable.

Out of these combined efforts systematically directed was born the French antituberculosis organization with its 580 dispensaries and 32,000 beds for tuberculosis patients scattered throughout France.

The present work is the logical outgrowth of Léon Bourgeois' activities. The part that he took in the antituberculosis campaign, which is only one of the many phases of his beneficent activities, is sufficient in itself to entitle him to the admiration and gratitude of those to whom he has shown the way and who have been chosen to continue the work

RIO DE JANEIRO

(From Our Regular Correspondent)

Dec. 15, 1925.

New Tuberculosis Society

The physicians employed in tuberculosis work by the national department of health have organized the Society for the Study of Tuberculosis. The following officers were elected: Dr. Placido Barbosa, chief of the tuberculosis division, president; Dr. Ary de Lima, secretary; Dr. Genezio Pitanga, librarian. This society differs from others now existing here in that its chief aim is to keep its members posted on scientific developments as related to their specialty. It therefore adopted for this purpose the plan in force at the Oswaldo Cruz Institute. Any papers appearing on tuberculosis are divided each fortnight by the president among several members, who must abstract and discuss them at the next meeting of the society. In addition, original reports will be read, these to be published with the discussions in a quarterly bulletin.

Rat Spirochetes

Dr. A. Lins submitted a report to the Rio Medical Society on the presence of *Leptospira icterohemorrhagiæ* in the city rats. His research was conducted according to the methods in use elsewhere. As a result, he found the organism in rats from different places in Rio. The occurrence of infectious jaundice is therefore a possibility at any time in the future.

Hydrocephalus

Dr. W. Pires described before the Brazilian Society of Neurology, Psychiatry and Legal Medicine a rather interesting case of hydrocephaly in a child aged 9 years. At birth, there was noticed a certain disproportion between the relatively small face and the enormous skull. This has progressed until reaching its present monstrous aspect. Lumbar puncture showed a very high pressure. Nonne, mastic and benzoin spinal fluid tests proved positive, thus revealing the syphilitic nature of the trouble. A roentgen-ray examination showed flattening of the sella. The heavy weight of the head makes walking difficult. There is mental backwardness.

Antityphoid Vaccination by Mouth

Dr. Teixeira Coimbra described recently at a meeting of the Medical and Surgical Society his experience with oral vaccination as a preventive of typhoid and paratyphoid. His results show that it is at least as efficient as subcutaneous inoculation. It is also easier to use and is better accepted by the people. It should always be used in any epidemic as in some places it is the only method available to health authorities, and perhaps permits of results similar to those obtained with smallpox. Through the large number of persons inoculated by mouth at Aracajú, Dr. Teixeira intends to verify the duration of the immunity, the available data already suggesting its being equal to that produced with the subcutaneous route.

Neurorelapses in Syphilis

Dr. G. de Moura Costa described at the last meeting of the Society of Neurology a peculiar case of syphilitic nerve relapse. A patient had a chancre which healed following two injections of neo-arsphenamine. He then gave up treatment. A month afterward, the patient was amazed at the presence of right peripheral facial paralysis, decreased hearing, headaches and slight dizziness. An eye examination made by Dr. B. de Cunha showed choked disk. The lumbar puncture revealed high cerebrospinal pressure; the Wassermann and lymphocytosis tests were positive; all clinical tests were negative. Among Moura Costa's series of some 300 cases of nerve relapses, this is the first one of optic tract involvement, these lesions usually exhibiting a preference toward the facial and auditory nerves. The choked disk and eye disturbances do not always parallel each other. The papilledema may be well tolerated for a long time until the eyesight decreases, and the neuritis turns rapidly into atrophy. Such a possibility demonstrates the value of a lumbar puncture and an ophthalmologic examination in all cases of high intracranial pressure, this being compulsory in the neurosyphilis service of the Gaffrée-Guinle Foundation.

BUDAPEST

(From Our Regular Correspondent)

Jan. 1, 1926.

Virchow, as Censor

Dr. Imre Berczeller, lecturer to the Budapest University, and a great adherent of Virchow, in a memorial article in the *Gyogyaszat,* writes that he must acknowledge that Professor Virchow was harsh in his treatment of candidates. This is borne out by Professor Schleich in his memoirs entitled "Besonnte Vergangenheit." He relates here that he worked in the institute of Virchow for six half-years. He bore the greatest admiration for Virchow, and his father was Virchow's personal friend. Although he reveres his late master, he sharply condemns the professor's rage when he experienced a certain kind of ignorance on the part of a candidate. "I have been a witness," he writes, when a candidate displaying gross ignorance was interrupted by Virchow: "Stop! Whom do you the more resemble, your father or mother?" The candidate answered confusedly: "I believe my mother." Thereupon, says Schleich, Virchow shocked us all by exclaiming, "Alas, poor woman!" In order to atone for this insult, Virchow passed the deficiently prepared candidate, who, in his joy at the unexpected result, pardoned the offense. Schleich relates another story which shows Virchow in an etymological blunder. Virchow asked a candidate the origin of the word "serum." The candidate did not know and failed. Professor Bardeleben, who was an uncle of the candidate, was annoyed at the outcome, and at a professorial banquet questioned Virchow about it. Virchow responded that the origin of the word serum must be known. Bardeleben asked all the great scientists present whence the word serum originates, and no one knew. Thereupon Virchow, with a sardonic smile, explained the origin, and explained it erroneously. The point is at best a controversial one.

The whims of some censors are generally known, and as long as they are manifested only by eccentric questions may be overlooked, although they may be inconvenient to others. For instance, in Budapest University, the professor of physics once asked, "Do you see that chambermaid in the fourth story window in the opposite house?" On receiving an affirmative answer, he asked, "What has she got?" The candidate was expected to respond, "She has potential energy." This sort of thing may be pardoned merely as a joke which is slightly out of place. But if the censor deliberately offends a candidate as Virchow did, it is to be condemned, even if it is done by Virchow.

Students of the present era cannot sufficiently appreciate Virchow, says Berczeller. His works were of the greatest importance in the second half of the nineteenth century, and placed the medical sciences on entirely new foundations. He worked and wrote extraordinarily much. He took part in every medical question, and what he said was not regarded as an opinion but as a decision. He could spare time to deal intensively with all branches of medical sciences; he was responsible for achievements in anthropology and archeology; he was involved also in politics, and was a member of the German Reichstag.

A man who has run such a phenomenal career, and could secure for himself such a unique position in the scientific world, must have been endowed with extraordinary mental abilities; therefore, it is difficult to understand how such a man could insult his candidates. Even he, the pronounced genius, wrongly comprehended the task of a censor. The censor is trusted by the state to examine and give his opinion as to the satisfactoriness of the knowledge of a candidate for the successful practice of medicine. To decide this within twenty or thirty minutes, and sometimes, in less time requires great practice and still greater good will. Such cases as those described above would not happen if censors would recall the agonizing conditions that they themselves lived through when they sat before their examiners.

Postgraduate Lectures on Pulmonary Tuberculosis

Last month Baron Alexander Koranyi, professor of clinical medicine at the Budapest University, gave a postgraduate course in two Budapest consumption sanatoriums. The course, chiefly intended for country practitioners, attracted an unexpectedly great number. The list of lectures was as follows: 1. Introductory address, by Professor Koranyi. 2. The pathologic anatomy of pulmonary tuberculosis. 3. Puerile tuberculosis (with practical exercises). 4. The diagnostics of pulmonary tuberculosis (with practical exercises). 5. The spontaneous cure of pulmonary tuberculosis. 6. The pathology and therapy of cavities. 7. The therapeutics of tuberculosis. 8. The prognosis in cases of pulmonary tuberculosis. 9. The roentgen-ray diagnostics and therapeutics of pulmonary tuberculosis. 10. The climatic and physical treatment of tuberculosis. 11. The surgical treatment of pulmonary tuberculosis. 12. The diagnostics and therapeutics of surgical tuberculosis. 13. The pathology and therapy of laryngeal tuberculosis. 14. The present state of the study of immune therapy in pulmonary tuberculosis. 15. The rôle of tuberculosis dispensaries in the fight against tuberculosis. 16. The organization for the prevention of tuberculosis in Hungary.

Satisfaction to a Senior Physician

The board of the Jewish community of the city of Budapest, as maintainer of a big and leading hospital, dismissed from service one of the senior physicians of its hospital, who had been connected with it for more than a score of years, on the accusation of a young girl. Dr. Alexander Banyai, the head of the outpatient department of the hospital, referred a nonpauper patient, a girl, to whom he duly had given first aid, to a private physician for the continuation of treatment, arguing that the outpatient department of the hospital is intended for the poor and indigent only. By so doing he complied with the demand of the medical profession of the whole country, which suffers at present from the disastrous economic crisis. He complied also with the order of the management of the hospital itself, which informs the public that only poor patients are allowed gratuitous treatment. The board of the Jewish community did not give a hearing to Dr. Banyai, before dismissal, despite the fact that the medical board of the hospital had approved Dr. Banyai's conduct. The interdistrict committee of the Hungarian Medical Association has thanked Banyai for his conduct and expressed the hope that the staff of the Jewish Hospital would give satisfaction to Dr. Banyai. In this case intervention by the medical association would be superfluous. The dismissal was revoked, with apologies.

Fatal Accident to a Medical Man

Dr. Stephan Farago, aged 28, while making a screen examination in the roentgen-ray clinic last week, touched a high tension wire and was instantly killed.

Anniversary of Alexander Koranyi and Emile Gross

Dr. Alexander Koranyi and Dr. Emile Gross were honored on the twenty-fifth anniversary of their professorships in Budapest University. The former is well known, particularly for his study of the lowering of the freezing point of urine, and by reason of his experiments with benzene in the treatment of leukemia. The latter, professor of ophthalmology and member of almost all foreign medical and scientific societies, became universally known in the international medical congress held in Budapest in 1909. Both professors were presented by their late pupils with the collection of their works. The 326 page issue of the "Orvoskepzes" (Postgraduate Medical Teaching) which is edited by professor Emile Gross was wholly devoted to articles written by the pupils of Koranyi, who number about fifty. Koranyi's portrait was unveiled in the lecture room of his clinic. In Gross' clinic, medals in his honor were distributed.

PRAGUE

(From Our Regular Correspondent)

Dec. 31, 1925.

Unusual Muscular Control

Prof. Charles Weigner recently demonstrated to the Association of Czech Physicians in Prague a man who shows remarkable muscular control. He is 51 years old and is making his living from his unusual abilities. At the age of 14, as the result of typhoid, he developed severe constipation. In order to overcome this he began to exercise his abdominal muscles. Now he can contract separately the upper and lower portions of the abdominal wall, bring about waves of muscular contractions running along the abdominal wall, and even contract separately the different portions of the individual abdominal muscles. He can control the muscles around the Adam's apple, and can imitate scoliosis. By contracting the left half of the diaphragm he can push the heart into the median line, where it can be easily seen below the sternum. He masters his heart rate indirectly by imagining different situations. Through autosuggestion of cold, he has achieved the power of contracting the cutaneous muscles. Of unusual interest is his ability of dilating the pupil of his left eye. Most curious is his trick of contracting one half of his face into a smile and the other one into a sad expression. He has a 7 year old daughter who has learned most of the tricks. This case represents, apparently, inherited ability to control muscles in a more extensive degree than is usual.

Death of Znojemsky

Czech medicine lost recently the fifth of its leading professors. Dec. 11, 1925, Prof. J. Znojemsky, chief of the surgical department of the Czech polyclinic in Prague, died. He was to have been appointed to the chair of surgery after the death of Professor Kukula, whose most prominent pupil he was. Born in 1873, he obtained his degree in medicine at the Prague Czech Medical Faculty. In 1900 he entered the surgical clinic of Professor Maydl in Prague, and when Professor Kukula became the chief of the clinic in 1904 he became his assistant. He remained for fourteen years in this position. In 1909 he became lecturer, and in 1913 assistant professor of surgery. In 1921 he was charged by the government with the organization of the third surgical clinic at the Czech Prague Medical Faculty, but his illness prevented the realization of this task. His specialty was bone and joint surgery. He wrote a voluminous monograph on fractures and luxations. He was interested in the embryology of the intestinal tract. He published a series of papers on the development of intestinal diverticula, on the development of the processus vermiformis, and on other subjects. He took part in the studies of Professor Kukula on the operative treatment of appendicitis. The part of Kukula's monograph on appendicitis that deals with pathologic anatomy is based on Znojemsky's studies. As a teacher he was greatly appreciated by his students. The character of the work in the surgical department of the polyclinic dealt with those parts of surgery which the general practitioner needs in his daily life.

Trachoma

The interest of the health committee of the League of Nations in trachoma has stimulated similar study in Czechoslovakia. Although trachoma is a notifiable disease, this notification does not give an accurate idea of its spread because of its chronic character. Therefore the Czech Prague Ophthalmologic Clinic has analyzed its material since 1912. A similar study was made in 1890 by Dr. Reisinger and in 1901 by Dr. Bailoni from the same clinic; so it is possible to compare present conditions with the history. The incidence of trachoma has decreased considerably. In the years 1883-1889, the percentage of trachomatous patients from all the cases in the clinic was 4.04. At present the number rarely exceeds 1 per cent. The lowest figure appears for the year 1916 (0.8 per cent), which is followed by a gradual increase in the last years of the war and in the postwar period. The peak was attained in 1921, when the percentage rose to 1.5. The last years have again witnessed a steady decline. The relative prevalence of trachoma in the different districts has not changed in the course of years. The territory along the Elbe with rich agricultural villages seems to be especially favorable to the spread of the infection. On the other hand, the mountainous districts are remarkably free. Lack of hygienic conditions among the agricultural population is apparently the chief factor favoring the spread of the disease.

Ectopic Heart

Recently the Prague medical profession has seen an otherwise normal boy who was born with complete ectopia of the heart. Only three similar cases are described in scientific literature. The sternum is not developed, so that the bony structure of the thorax is open anteriorly although completely covered with skin. The lobes of the lungs touch each other, so that no space remains for the heart. The heart is completely naked and protrudes through an opening in the skin below the neck in the median line. The aorta and pulmonary artery are fixed in the opening, and the heart undulates on the two vessels. Naturally, the heart suffered from the exposure and it was provided with a glass cover, and is kept warm and moist with a physiologic solution. The anomalous position of the heart is a great obstacle to the blood circulation, and the child cannot live very long. The mother of the child has shown remarkable understanding of scientific research and has consented to close clinical observation of the child. The case presents a rare opportunity for observation of the activity of a human heart. Under the direction of Professor Ostrcil, chief of the Czech Gynecologic Clinic, observations are being made on the heart and especially the different phases of the heart contraction studied with the help of moving pictures. It is anticipated that the combination of direct observation with cardiography will furnish valuable information.

Change in Ministry of Health

On account of recent general elections, a new minister of health was appointed. The retiring minister, Mr. Jan Sramek, has been in office for the last three years. Although not a professional man, he served for many years as a member of the provincial health board for Moravia. In that position he familiarized himself with the administration of medical institutions. During the time of his service he paid especial attention to similar problems. Under him the creation of the state institute of hygiene in Prague was worked out and the first part of the institute opened. He has put into operation the law on the nationalization of health officers to the limited extent that the state finances permit. His favorite fields were health resorts and watering places. In the service he fostered the nonprofessional element in public health work. Being the head of the Catholic party and one of the most powerful politicians of the country, he suffered from lack of time for the needs of his office. Mr. A. Tucny was appointed as his successor. He is also a nonprofessional worker and is prominent in the Socialist party. He has served twice in previous cabinets, having held the office of minister of public works and of minister of posts and telegraphs. He intends that the professional element shall be the backbone of the health service. In the program which the new government has announced, the completion of the institute of hygiene is named first. The government considers second in importance the strengthening of the health service in those provinces where it has not been sufficiently developed, especially in Slovakia and Carpathian Russia. Dr. Jan Semerád was reappointed chief medical officer of the ministry of health.

Health Demonstrations

The idea of health demonstrations is gaining ground in Czechoslovakia. Three years ago a health demonstration was started in Kladno district, near Prague, chiefly as an experiment. It was the first district into which public health nurses have been introduced as a regular part of the official health machinery. Recently, similar projects have been inaugurated or are being prepared. The demonstrations are being conducted under the auspices of a committee appointed by the national council of social hygiene, and representatives of the ministry of health and the ministry of social welfare. The fund for the demonstrations, to which all the participating agencies contribute, is being administered by the Red Cross. While the Kladno demonstration is primarily a demonstration of rural hygiene, a project recently started in Vrsovice, a suburb of Prague, will be a demonstration of public health work in urban communities. Both of these demonstrations have a close relationship to the state institute of hygiene, which also will have a school for the training of public health personnel. The plan is to use the demonstration districts as a training ground for the personnel of the institute. Another demonstration was started in Slovakia in the district of Turc. Sv. Martin, where a new school for health visitors has been established. A similar demonstration is being prepared for the autonomous territory of Carpathian Russia. The Kladno demonstration is being supported by the International Health Board of the Rockefeller Foundation, the plans for the rest have been made in participation with representatives of the foundation.

BERLIN

(From Our Regular Correspondent)

Dec. 19, 1925.

Meeting of the Society of Tropical Medicine

At the recent meeting of the Deutsche Tropenmedizinische Gesellschaft in Hamburg, Plehn (Berlin) discussed immunization against malaria, a field that, owing to the difficulties of research, has lain fallow for some time. He found that paralytics who had been affected with tertian fever were more or less immune later to artificial infections with the same strain of parasite but not to infections with tropical parasites. In tropical malaria, an increased resistance to new infections could be brought about only by means of subtherapeutic doses of quinine and repeated superinfections. It was found that a latent tropical fever of that type could be activated by grafting on the tertian type; yet it seemed to protect, in a measure, against the tertian type. No antibodies could be discovered in the blood. Quinine does not seem to exert an immediate effect on the parasites. The results caused the author to renounce the view that he had previously entertained with respect to the uniformity of malaria parasites. In the discussion that followed, the absence of antibodies in the blood was confirmed by many, but in some instances a different outcome of similar experiments on malaria immunity was reported. Possibly with the plasmodia as with other protozoa we must distinguish between immunity to a given strain and immunity to a given species. The method by which an immunity to tropical malaria may be secured is supposed to create a disposition to blackwater fever.

In the field of helminthology, Fülleborn made two addresses. Dealing with "The Mode of Infection with Ascaris," he gave an account of the migrations of ascarid larvae in the host. In a second address, he discussed "Cutaneous Reactions in Helminth Affections." Whereas the entrance of Strongyloides larvae causes only a temporary itching in the skin of normal persons, in hypersensitive Strongyloides carriers it produces wheal formation and itching, persisting for many days. Similar manifestations are sometimes observed in the anal fissure, being probably caused by larvae that have developed there and have bored into the skin. Pulverized Strongyloides larvae in the same persons, placed in superficial incisions, cause large urticarial wheals. This cutaneous reaction is apparently specific, though, to be sure, it may be caused, to a somewhat less extent, also by ascaris antigen. The method could possibly be put to practical use in tropical helminth affections.

Winkel (Java) gave an account of the methods employed to combat frambesia, or yaws, in the Dutch East Indies. He explained the organization of the campaign, and referred to the substantial results.

Ziemann (Berlin) dealt with the clinical aspects of gangosa, or rhinopharyngitis mutilans, which is thought to be connected with frambesia, although the connection has not been fully established, nor has its differentiation from other similar affections been clearly shown. One point was that our knowledge of the relations between frambesia and syphilis is by no means complete.

In several addresses, questions pertaining to specific therapy and chemotherapy were treated. Giemsa (Hamburg) discussed the chemotherapeutic value of two derivatives of quinine.

Röhl (Elberfeld) spoke on the action of substances of the Bayer 205 series. Taking as his point of departure the formula given by Fourneau, he stated that slight changes in the molecule cause a change in the specific action, so that the substances become effective against spirochetes. Oxy and amido groups are not necessary for securing a bactericidal effect, nor is the naphthalene nucleus needed. Aromatic derivatives of urea may be effective, but sulpho groups with aromatic nuclei are needed. They probably form with basal cell components (especially, nuclear components) sparingly soluble salts and thus develop their effective action. In fact, they are filled with simple basic protein substances highly diluted. The protein-dye compound is probably reversible. Therefore, a longer sojourn of the substance in the organism of the host is necessary, which is facilitated by the size of the molecule. The remedy is bound to the cells and the blood fluid. The optimal distribution is probably not attained in all species of animals, so that differences in action result. Through the effect of the preparation on the cells of the parasites it is assumed that cell division is prevented and that the parasite succumbs finally to the defense forces of the body.

H. Schmidt (Dresden) gave a survey of the trivalent and pentavalent antimony compounds that he has made researches on, and explained their action. As indications, he mentioned, besides trypanosomiasis, leishmaniosis and the trematode affections, filaria, trichinosis, leprosy, malaria, spirochetes, multiple sclerosis, pemphigus tropicus, and venereal granuloma. In tropical gametes and in filaria, favorable action has not been observed, but in bilharziasis very good results were secured.

Marriages

WILBUR A. RICKETTS, Dayton, Ohio, to Miss Sara Louise Sparling of Waterville, in Toledo, Dec. 26, 1925.

JAMES ELDRIDGE BRADFORD, Spring Place, Ga., to Mrs. Aloe King Brown of Cleveland, Tenn., Dec. 22, 1925.

JOHN OTIS CLETCHER, Tuscola, Ill., to Miss Jessie Irene Wilson of Flushing, Ohio, January 26.

CHESTER RUSSELL, Artesia, N. M., to Miss Esther La Due of Alamogordo, Dec. 25, 1925.

ROBERT A. HAMILTON, Hillsboro, Ill., to Miss Ida Dworsach of Litchfield, January 2.

EDWARD HUNT RAY, Lexington, Ky., to Miss Louise Moore of New Orleans, January 5.

Deaths

John Mallory Lee ⊕ Rochester, N. Y.; University of Michigan Homeopathic Medical School, Ann Arbor, 1878; member of the American Radium Society; past president of the Monroe County Medical Society and the American Institute of Homeopathy; proprietor of a hospital bearing his name; state medical examiner under Regents of the State of New York, 1895-1907; one of the authors of a textbook on surgery; aged 73; died, January 11.

Oliver Louis Pothier, New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1889; member of the Louisiana State Medical Society; formerly demonstrator of microscopical anatomy, bacteriology and pathological anatomy and assistant professor of pathology at his alma mater; served in the M. C., U. S. Army, during the World War; at one time on the staff of the Charity Hospital; aged 61; died, January 23.

Charles R. Shinault ⊕ Little Rock, Ark.; Medical Department of the Tulane University of Louisiana, New Orleans, 1890; past president of the Arkansas Medical Society and the state board of medical examiners; ship surgeon for the United Fruit Company, plying between New Orleans and Honduras; aged 58; died, January 11, at New Orleans.

Haines C. Thatcher, West Danby, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1889; member of the Medical Society of the State of New York; aged 63; died, January 19, of injuries received when the automobile in which he was driving was struck by a train.

Flora Matina Tanquary Brian, Bellmont, Ill.; Medical Department of the University of Illinois, Chicago, 1904; member of the Illinois State Medical Society; aged 48; died, Dec. 29, 1925, at St. Mary's Hospital, Evansville, Ind., of injuries received in an automobile accident.

Nelson Warner Cady, Logansport, Ind.; Bellevue Hospital Medical College, New York, 1877; member of the Indiana State Medical Association; on the staff of the Northern Indiana Hospital for Insane; aged 75; died, January 18, following an appendectomy.

John Benjamin Powers, Wake Forest, N. C.; Long Island College Hospital, Brooklyn, 1878; formerly professor of bacteriology and pathology, Wake Forest College School of Medicine; aged 71; died, Dec. 31, 1925, of heart disease.

Paschal Y. Pursifull, Whitesburg, Ky.; Hospital College of Medicine, Louisville, 1904; member of the Kentucky State Medical Association; formerly county health officer; aged 46; died, January 12, of pulmonary tuberculosis.

Andrew Louden Chapman, Normal, Ill.; Cincinnati College of Medicine and Surgery, 1877; Civil War veteran; aged 78; died, January 12, at St. Joseph's Hospital, Bloomington, of complications, following a fracture of the hip.

Major Van Matre, Keota, Okla. (licensed, Oklahoma, under the Act of 1908); member of the board of education and bank president; aged 52; died, January 8, at a hospital in Fort Smith, Ark., following an appendectomy.

Clifford Walcott Randall, Worcester, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1895; member of the Massachusetts Medical Society; aged 65; died, Dec. 27, 1925, at the Worcester Hospital.

⊕ Indicates "Fellow" of the American Medical Association.

James Frank Bean, Brundidge, Ala.; Medical Department of the Tulane University of Louisiana, New Orleans, 1910; member of the Medical Association of the State of Alabama; aged 36; died, January 7, of pneumonia.

Robert C. Clarke ⊕ Pittsburgh; University of Wooster Medical Department, Cleveland, 1881; formerly member of the board of health and board of education; aged 70; died, January 6, of cerebral hemorrhage.

John Moultrie Anderson, Fayetteville, Tenn.; University of Georgia Medical Department, Augusta, 1860; member of the Tenneseee State Medical Association; aged 87; died, Dec. 13, 1925, at New Herman.

Halbert Charles Hubbard, Rutland, Mass.; Boston University School of Medicine, 1906; on the staff of the Rutland State Sanatorium; aged 43; died, January 8, following an appendectomy.

Howard Smith McClure, Bucyrus, Ohio; Ohio State University College of Medicine, Columbus, 1918; member of the Ohio State Medical Association; aged 32; died, January 16, of pneumonia.

George H. Dow, Chehalis, Wash.; Chicago Homeopathic Medical College, 1885; member of the Washington State Medical Association; aged 64; died, Dec. 31, 1925, following a long illness.

Frank Howard Parker, Hamilton, Mont.; College of Physicians and Surgeons, Boston, 1891; member of the Massachusetts Medical Society; aged 70; died, January 10, of heart disease.

John A. Hogue, Jr. ⊕ Holcomb, Mo.; Kentucky School of Medicine, Louisville, 1907; past president of the Dunklin County Medical Society; aged 42; died, January 14, of heart disease.

Samuel P. Low, Santa Barbara, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1889; member of the California Medical Association; aged 62; died, Dec. 6, 1925.

Nathaniel Van Voorhis Graves ⊕ Chicago; Loyola University School of Medicine, Chicago, 1916; aged 36; died, January 22, at the West Side Hospital, of carcinoma of the colon.

Francesco Marino, Brooklyn; University of Naples, Italy, 1905; member of the Medical Society of the State of New York; aged 47; died, January 8, at the Broad Street Hospital.

Henry Carroll Frie, Duncan, Okla.; Bellevue Hospital Medical College, New York, 1895; member of the Oklahoma State Medical Association; aged 73; died, January 4.

John J. Slattery, Washington, D. C.; Howard University School of Medicine, Washington, 1892; also a pharmacist; aged 59; died, January 4, of cerebral hemorrhage.

Arthur W. Brewster, Brooklyn; Long Island College Hospital, Brooklyn, 1881; aged 63; died, Nov. 4, 1925, at the Kings County Hospital, of cirrhosis of the liver.

Wilbert Samuel Davis, Sanbornville, N. H.; Medical School of Maine, Portland, 1891; member of the New Hampshire Medical Society; aged 61; died in January.

Arthur Silver, Sidney, Ohio; Medical College of Ohio, Cincinnati, 1908; member of the Ohio State Medical Association; aged 45; died, January 10, at Harvey, Ill.

Adolph E. Scheble, Toledo, Ohio; Cleveland University of Medicine and Surgery, 1870; Civil War veteran; aged 77; died, January 11, of cerebral hemorrhage.

Robert Mercer Evans, Minto, N. D. (licensed, North Dakota, 1885); member of the North Dakota State Medical Association; aged 81; died, January 8.

Thomas H. Johnson, Kansas City, Kan.; California Eclectic Medical College, Los Angeles, 1887; aged 81; was shot and killed by a robber, Dec. 23, 1925.

James William Simpson, Owenton, Ky.; Kentucky School of Medicine, Louisville, 1881; aged 74; died, January 13, of a fractured hip, received in a fall.

August Charles Pfenning, Brooklyn; Medical Department of Columbia College, New York, 1889; aged 62; died, January 8, of cerebral hemorrhage.

William G. Wheeler, Racine, Wis.; Rush Medical College, Chicago, 1881; for five years member of the board of education; aged 68; died, January 17.

Henry Ward Clifton ⊕ Watseka, Ill.; Medical Department of the University of Illinois, Chicago, 1908; also a pharmacist; aged 55; died, January 12.

Richard Victor Fowler, Perth, Ont., Canada; Trinity Medical College, Toronto, 1892; aged 63; died, recently, at the Ottawa (Ont.) Civic Hospital.

Samuel D. Bugg, Groesbeck, Texas; St. Louis Medical College, 1881; aged 67; died, January 10, at a sanatorium in Dallas, of heart disease.

John De Witt Riddell ⊕ Salina, Kan.; Kansas City Medical College, 1896; on the staff of St. John's Hospital, where he died, January 5, aged 57.

Harry A. Woodside ⊕ Ridley Park, Pa.; Jefferson Medical College of Philadelphia, 1897; aged 54; died, Dec. 17, 1925, at the Taylor Hospital.

William J. Maniss, Vera, Texas; University of Tennessee College of Medicine, Memphis, 1894; aged 67; died, Nov. 14, 1925, of septicemia.

Hugh Aloysius Rodden, Brooklyn; Long Island College Hospital, Brooklyn, 1901; aged 47; died, January 5, following a long illness.

Harry Lincoln Kolseth ⊕ Baltimore; Baltimore Medical College, 1912; aged 58; died, Dec. 5, 1925, of arteriosclerosis and hypertension.

Max J. Friedel, Chicago; Rush Medical College, Chicago, 1897; aged 76; died, January 23, of cerebral hemorrhage and arteriosclerosis.

Sarah Gertrude Banks, Detroit; University of Michigan Medical School, Ann Arbor, 1873; aged 86; died, January 10, of pneumonia.

Margaret Trevitt, Wausau, Wis.; Eclectic Medical Institute, Cincinati, 1881; aged 66; died, Dec. 7, 1925, of cerebral hemorrhage.

William Pinkney Sutherland, Creal Springs, Ill. (licensed, Illinois, 1878); aged 78; died, January 9, of cerebral hemorrhage.

Joel Albert Gibson ⊕ Port Arthur, Texas; Atlanta Medical College, 1890; aged 56; died suddenly, January 2, of cerebral hemorrhage.

Charles Read Collins ⊕ Washington, D. C.; Jefferson Medical College of Philadelphia, 1884; aged 63; died, January 6, of uremia.

Elmer E. Bowman, Mount Jackson, Va.; University of the South Medical Department, Sewanee, 1900; aged 52; died, January 7.

Joseph Edward Greene, Augusta, Ga.; University of Georgia Medical Department, Augusta, 1881; aged 66; died, January 12.

Harry Jackson Watson, Winnipeg, Manit., Canada; Trinity Medical College, Toronto, Ont., 1899; aged 59; died, January 13.

Louis Bernard Samaine, Lansing, Mich.; Saginaw Valley Medical College, 1901; aged 48; died, Dec. 23, 1925, of heart disease.

Gustave August Thieme, Cantril, Iowa; Keokuk Medical College, 1893; aged 56; died, January 16, following a long illness.

M. H. Waldron, Naugatuck, W. Va. (licensed, West Virginia, 1885); Civil War veteran; aged 82; died, January 13.

Frank K. Moyer, Schoolcraft, Mich.; Baltimore Medical College, 1897; aged 51; died, January 2, of heart disease.

Robert Low Lane, Somerville, Mass.; New York Homeopathic Medical College, 1872; aged 80; died, January 9.

Frank M. Eccles, Oxford, Md.; College of Physicians and Surgeons, Baltimore, 1881; aged 67; died, January 9.

William E. Harris, Colton, Ore.; College of Physicians and Surgeons, Chicago, 1892; aged 65; died, Nov. 9, 1925.

Horace Loomis Jones, New York; Jefferson Medical College of Philadelphia, 1884; aged 66; died, January 9.

R. L. Burks, Livingston, Tenn. (licensed, Tennessee, 1889); Confederate veteran; aged 83; died, Dec. 3, 1925.

William M. Province, Franklin, Ind.; Miami Medical College, Cincinnati, 1867; aged 79; died, Dec. 9, 1925.

Frederick L. Dougall, Brilliant, Ohio (licensed, Ohio, 1896); aged 63; died, January 15, of heart disease.

John H. Harrison, Tillatoba, Miss.; Memphis Hospital Medical College, 1888; aged 76; died, January 9.

Thomas J. Lyle, Alliance, Ohio; Physio-Medical Institute, Cincinnati, 1882; aged 79; died, January 3.

Nicol Martin Mandl ⊕ New York; University of Vienna, Austria, 1891; aged 60; died, January 2.

James Benjamin Long, Abbeville, Ala.; Louisville Medical College, 1882; aged 68; died, January 7.

James M. Spinks, Rockmart, Ga.; Atlanta Medical College, 1879; aged 71; died, January 8.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

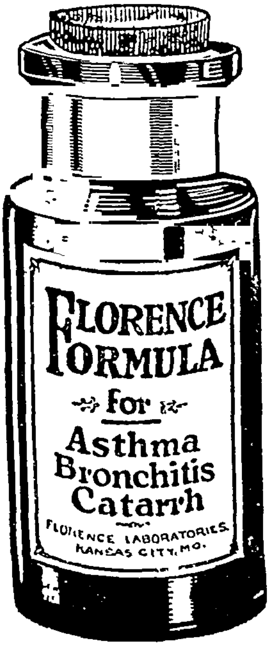
FLORENCE FORMULA

Another Kansas City Mail-Order Asthma Cure Fake

"Florence Formula" is another one of the numerous alleged cures for hay-fever and asthma sold on the mail-order plan. It is put out by the Florence Product Corporation, Coca Cola Building, Kansas City, Mo. It is said to have for its president and treasurer Florence H. Shearer, and for its vice president Frank V. Eberhart. The company was established, apparently, under the name Florence Laboratories, although, of course, there were no laboratories, and founded as a trust estate with F. H. Shearer, F. V. Eberhart and W. W. Burgess as the trustees. Later it was incorporated. The records are said to show that when the Florence Products concern was incorporated under the laws of Missouri, it had an authorized issue of three hundred shares of no par value with the following shareholders:

F. H. Shearer	150 shares
F. V. Eberhart	75 shares
George A. Breon	75 shares

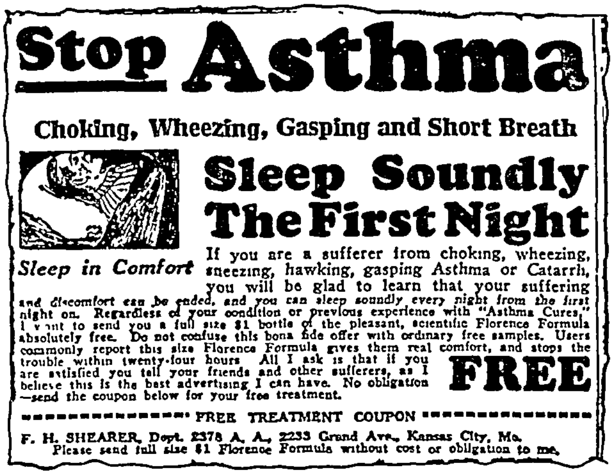
Whether Florence H. Shearer is an important factor in this particular piece of quackery or is merely the "fall guy" so often employed by the mail-order quacks, we do not know. In 1924 "Eyrone," an eye-cure nostrum, was being sold on the mail-order plan from the same address (Coca Cola Building, Kansas City) as the Florence Formula, and the public was urged to write to F. H. Shearer. Before that the Eyrone advertisements stated that letters should be addressed to M. B. Smith. In 1923, M. B. Smith was connected with still another mail-order fake, first called the "Re-bild Laboratories" and later the "Whinton Laboratories." This concern, which operated from the present address of the Florence Products Corporation, was featuring at that time two nostrums, "Re-bild" and "Rid-o-fat." One was supposed to make thin people fat and the other to make fat people thin—thus demonstrating how easy it is for mail-order quacks to catch the suckers coming and going.



George A. Breon, who seems to have had seventy-five of the original three hundred shares of the Florence Products Corporation, is said to claim that he has disposed of his interests. One wonders whether the George A. Breon who invested so heavily in this mail-order quackery is the same individual who puts out a line of "ethical proprietaries" that are exploited to the medical profession.

W. W. Burgess, one of the original trustees, is possibly the same W. W. Burgess who was president of a mail-order concern known as the Burgess, Johnson, Webb Corporation, which operates a large number of pieces of mail-order quackery.

Frank V. Eberhart, the vice president of the Florence Products Corporation, is said also to be, or to have been, the secretary of a printing concern of Kansas City. This is the usual combination for those who go into mail-order quackery. Individuals connected with printing concerns or with advertising agencies, or both, find it profitable to espouse quackery. Printing concerns that have had experience in printing the follow-up material for mail-order quacks and advertising agencies that have placed the advertisements for these quacks soon realize that a knowledge of medicine and pharmacy is entirely unnecessary in practicing medicine and pharmacy on the mail-order plan. The only skill needed in mail-order quackery is that of producing plausible "come-on" material and placing advertisements. So far as the medicaments are concerned, they are of minor importance, as large and supposedly reputable pharmaceutical houses can always be counted on to furnish at short notice the pills or tablets necessary for that unimportant part of the business.



Stop Asthma

Choking, Wheezing, Gasping and Short Breath

Sleep Soundly The First Night

Sleep in Comfort

If you are a sufferer from choking, wheezing, sneezing, hawking, gasping Asthma or Catarrh, you will be glad to learn that your suffering and discomfort can be ended, and you can sleep soundly every night from the first night on. Regardless of your condition or previous experience with "Asthma Cures," I want to send you a full size $1 bottle of the pleasant, scientific Florence Formula absolutely free. Do not confuse this bona fide offer with ordinary free samples. Users commonly report this size Florence Formula gives them real comfort, and stops the trouble within twenty-four hours. All I ask is that if you are satisfied you tell your friends and other sufferers, as I believe this is the best advertising I can have. No obligation—send the coupon below for your free treatment.

FREE

FREE TREATMENT COUPON

F. H. SHEARER, Dept. 2378 A. A., 2233 Grand Ave., Kansas City, Mo.
Please send full size $1 Florence Formula without cost or obligation to me.

Florence Formula is frequently advertised under the name of "F. Shearer." It is said by authorities consulted that the main investment of the Florence Products concern is that of mailing lists, or, as they are known in the parlance of the mail-order quack, "sucker lists." The company is said to have over one and a half million names. To those sufferers from asthma and hay-fever whose names this concern has on its list is sent the first of a series of form letters in which Florence Shearer says that she is informed that the person written to is a "sufferer from asthma, shortness of breath, wheezing, coughing, etc." She then declares that science has at last perfected an amazing constitutional treatment which she will allow any sufferer the opportunity of trying at her expense. The prospective victim is sent a few tablets, which probably cost at least one cent, and are described as "the regular one dollar size treatment." According to Mrs. Shearer, the "Florence Formula is different." As will be shown in this article, it is not different, but is essentially identical in composition with the "Asthma Tab" swindle recently put out of business by the federal authorities.

A few days after the preliminary letter has been received, the would-be victim gets the second of the follow-up series. In it he is told that the four days' treatment that was sent free would not, of course, cure him, but Mrs. Shearer is happy to announce that he can get the "Full Thirty Day Treatment" at a "special introductory" price of $5. If letter Number 2 is ignored, letter Number 3 comes two weeks later. This is accompanied by the usual farrago of testimonials, and the victim is again urged to send in $5. A week later, if no attention is paid to Number 3, comes letter Number 4 in which Florence Shearer opines that it is lack of money rather than lack of faith which is responsible for the failure of the victim to order Hence:

> "What I can do — and am going to do in your case — is to go right down in my pocket [How masculine!—Ed.] and enclose a Credit Coupon Check for $2 for you to use in obtaining the full thirty day Florence Formula treatment — at a cost of only $3 to you."

As we have said so many times, if those who patronize mail-order quacks will only wait, they need never pay the price originally asked for the nostrums, although they will always pay more than they are worth. If Mrs. Shearer's fourth letter still fails to bring in the money, letter Number 5 can be looked for in due course. In this she makes what she calls a "strictly confidential" offer. Like all strictly confidential letters of mail-order quacks, this is printed, doubtless by the tens of thousands, and is sent to every prospective sucker who fails to reply to any of the first four follow-ups. Mrs. Shearer confidentially offers to send the Florence Formula on the deferred payment plan—just as easy to buy an asthma cure as it is to buy an automobile. For a mere $1 Florence Shearer will forward a "regular $2 treatment," and will send subsequent treatments as they are needed—and paid for. If this letter fails to bring home the financial bacon, Florence gives up the matter as a bad job and charges up the printing and postage to profit and loss.

In order that the medical profession and the public might be given the facts regarding this Florence Formula that is "different," orders were sent in for the nostrum and some of the material turned over to the A. M. A. Chemical Laboratory, which gives the following report:

LABORATORY REPORT

"Two original bottles of a preparation labeled Florence Formula for Asthma, Bronchitis, Catarrh, Short Breath, Hay Fever and Allied Ailments (Florence Products Corporation, Kansas City, Mo.) were submitted to the A. M. A. Chemical Laboratory for examination. Each bottle contained mottled grayish white tablets each having an average weight of 0.48 Gm. (7½ grains). Qualitative tests indicated the presence of arsenic, calcium, sodium, potassium, iodide, sulphate, starch, sugar and a substance resembling talc. Emodin bearing drugs, alkaloids, salicylates, and coal tar derivatives were not found. Quantitative determinations yielded the following:

"Arsenic (as arsenic trioxide (As_2O_3)	0.14 per cent
"Calcium (Ca^{++})	5.70 per cent
"Potassium (K^+)	9.91 per cent
"Sodium (Na^+)	0.40 per cent
"Iodide (I^-)	28.72 per cent
"Sulphates (SO_4^{--})	13.56 per cent
"Invert Sugar	2.53 per cent
"Acid insoluble	2.67 per cent
"Loss in Weight at 120 C. (moisture)	6.89 per cent
"Starch and undetermined	29.48 per cent
	"100.00

"From the foregoing, it is concluded that the tablets contain essentially potassium iodide approximately 38 per cent, and an arsenic compound equivalent to 0.14 per cent arsenic trioxide, together with excipients and binders. The arsenic compound was probably added in a form such as 'solution of potassium arsenite'—'Fowler's Solution.' Each tablet contains the equivalent of approximately 0.18 gram (2¾ grains) of potassium iodide and 0.0007 gram (1/100 grain) of arsenic trioxide (equivalent to 1 minim 'Fowler's Solution'). The suggested daily dose of three tablets is equivalent to 0.54 gram (8¼ grains) of potassium iodide and 0.0021 gram (1/30 grain) of arsenic trioxide equivalent to 3 minims of 'Fowler's Solution.'"

From the chemists' report it will be seen that Florence Formula is essentially potassium iodide and Fowler's Solution, just exactly what "Asthma-Tabs," another Kansas City medical mail-order humbug, was found to be when the Association's Laboratory analyzed it. Both arsenic and potassium iodide have been used for many years by physicians in the treatment of certain asthmatic conditions. However, it is one thing for a physician to prescribe two such potent drugs for individual cases that have been the subject of personal examination, and an entirely different thing for mail-order quacks with no medical training to send arsenic and potassium iodide indiscriminately through the mails to any one that these fakers may think has asthma. It is to be hoped that that efficient but overworked branch of the government, the Office of the Solicitor of the Post Office Department, will in due time get around to the Florence Products Corporation and debar them from the use of the United States mails.

The Emotional Dyspeptic.—The man or woman who thinks constantly of what and what not, to eat; who gives careful attention to every little symptom; who constantly "examines his interior when he should be listening to the birds," is in a bad plight. He bids fair to become a nervous or, to use the modern term, an emotional dyspeptic.—Wood, T. D., and Dansdrill, T.: By-Ways to Health, 1925, p. 26.

Correspondence

BERLIN FACULTY AND AMERICAN PHYSICIANS

To the Editor:—The Journal, January 16, in the department of foreign news, carried an item with the title, "Berlin Faculty Decides Against Official Welcome to American Physicians," copied from a German medical journal. No doubt this was the attitude taken by the faculty of Berlin last fall, but many things have transpired to strengthen our international relations since that time. This month we received assurance from both the German government and the faculty of the University of Berlin that the members of the Inter-State Post-Graduate Assemblies, who will visit Berlin, June 15, 16 and 17, will receive a most hearty welcome. These greetings were received following several months of discussion between the representatives of the German government, the faculty of the university and representatives of this association, especially Dr. Carl Beck, secretary of the foreign assemblies of this organization, who is now in Europe completing the final clinic arrangements for the 1926 assemblies.

The position taken by this organization was, first, that the same spirit of equality and justice enjoyed by the profession of other countries in their relation with one another should be extended to those of the German-speaking countries; secondly, that this association is not affiliated with or responsible for the acts of other medical organizations, and therefore we could not sign any documents or declarations pertaining to other medical bodies.

Following the publication of the article mentioned above, we cabled Professor Bier, the chairman of the Berlin clinic committee of this association, to give us a statement so that we could speak authoritatively. The following is a copy of Professor Bier's answer:

William Peck
Freeport, Ill. Berlin, Jan. 21, 1926.
Under the stated circumstances heartiest welcome. Letter follows.
Bier.

In bringing about this understanding we believe we have advanced largely the spirit of international good fellowship, in which this organization is deeply interested.

William B. Peck, M.D., Freeport, Ill.
Managing Director, Inter-State
Post-Graduate Assemblies.

KLIEG EYES

To the Editor:—Recently I investigated the etiology and pathology of Kleig eyes in motion picture studios. The symptoms were so distressing for the time, and of such inconvenient duration, that the persons engaged were at a loss to cope with the situation.

The patients have great photophobia and lacrimation, and even when the trouble is not especially severe, are incapacitated because of their appearance and their inability to look at light. The early stages appeared to be a hyperemia, which, if allowed to continue, or exposed to the studio lights for any time, quickly merged into a mild chronicity, which resolved itself into a type of follicular conjunctivitis. In mild cases I sectioned a few specimens of the engorged and follicular conjunctiva, and found beginning hyperplasia of the interstitial tissue, and the follicles were evidently a lymphoid hyperplasia.

The most effective remedy in early stages seems to be a rather strong, dehydrating agent, such as glycerite of boroglycerin (U. S. P.). In severe cases, when folliculosis had appeared, it was necessary to treat them more energetically with glycerite of boroglycerin. I have never seen a case that did not respond to this treatment and cold applications, and enclosure in a darkened room for a couple of days. The tear ducts must also be watched, for during the great engorgement the puncta may be occluded, and if inflammatory conditions follow, a closure of the canaliculus, or even dacryocystitis, may ensue.

It seemed to be certain that not only the ultraviolet rays but also some of the visible rays produce this condition. In conjunction with the engineer at the studio, we tried quartz filters shot with cobalt, lead and various other metals, which I do not recall at present, in an attempt to see which would cut out the harmful rays and still allow sufficient illumination for the work.

Albert L. Brown, M.D., Cincinnati.

TESTIMONIALS FOR ANEDEMIN TABLETS

To the Editor:—Please note the circular for Anedemin Tablets which came to my desk today. I was interested enough in this matter to look up the records of the men who signed these testimonials, and I give them to you as my secretary has culled them from the directory:

Bell, David R.: University of Nebraska; homeopathic; born, 1856; licensed, 1885.
Coleman, James I.: College of Physicians and Surgeons, Baltimore; born, 1859; licensed, 1885.
Howell, W. E.: Lincoln Memorial University Medical Department, Knoxville; born, 1880; licensed, 1903; surgeon; member, American Medical Association.
Surrett, I. W.: Medical College of Virginia; born, 1873; licensed, 1908; Fellow, American Medical Association.
House, Albert L.: Yale University Medical Department; born, 1868; licensed, 1895; Fellow, American Medical Association.

It appears very discouraging that three members of the American Medical Association would write boosting letters such as these are, made up of pure balderdash, trying to disguise itself by a cloak of pseudoscience.

With all our advance in requirements of medical education, we yet have things like this. What is your reaction to it? May we ever expect the disappearance of this thing? I fear not, so long as cupidity and superstition remain in the world.

Theodore Diller, M.D., Pittsburgh.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REACTION OF NORMAL PERSON TO TUBERCULIN

To the Editor:—Can you tell me in detail what the reaction to tuberculin, taken internally or injected in the usual way, in large amounts, is in a person who has no tuberculous infection of any kind? In other words, I should like to know the physiologic action of tuberculin in a normal and healthy person. On the average, how large a dose is necessary to produce this reaction? You might state also the authority.

E. S. Hall, Boulder, Colo.

Answer.—According to Koch (Weitere Mittheilungen über ein Heilmittel gegen Tuberkulose, *Deutsch. med. Wchnschr.* **16:**1029, 1890), "from three to four hours after the injection, pains in the limbs, depression, tendency to cough, dyspnea, the symptoms rapidly increasing in severity; after five hours, an intense chill lasting almost an hour; at the same time nausea, vomiting and rise of temperature to 39 C.; after about twelve hours the symptoms abated and the following day the temperature sank to normal; a feeling of weight in the limbs and depression persisted for several days, and for the same length of time the point of injection remained red and painful."

Tice's Practice of Medicine **2:**522 states the following: "The generally accepted method of administering tuberculin is to begin with a dose of 0.0000001 cc. of the variety chosen and to increase this as regularly as possible every three or four days. The second dose is usually 0.00000015 cc. or 0.0000002; the third, 0.0000003; the fourth, 0.0000005; the fifth, 0.0000007, and the sixth, 0.000001. After this the next stronger dilution is used and the same relative increase in strength made at each subsequent injection. When a strength of 0.0001 is reached the increases are somewhat lessened each time, and often the interval between doses is lengthened. If any symptoms of reaction occur, the dose following is about one-half the strength of that which caused the reaction, and the quantity is increased gradually until the reacting dose is passed, the endeavor being to prevent all reactions."

BOTULISM

To the Editor:—I am interested in obtaining information on the number of deaths that have occurred from botulinus poisoning during the years 1920 to 1925, with the number of deaths specified for each respective year in that span of time. Miss Elizabeth Gulford of the Home Economics Bureau, Metropolitan Life Insurance Company, New York, suggests that you probably have this information published in your annual summary. If you have, I should appreciate having it.

Ina S. Lindman, Muncie, Ind.

Answer.—The following table includes data on botulinus poisoning from 1920 to 1926:

Year	Number of Outbreaks	Number of Cases	Number of Deaths
1920	14	48	33
1921	14	56	22
1922	21	55	46
1923	12	21	16
1924	8	43	29
1925	8	21	15
Total	77	244	161

TRADE DERMATITIS

To the Editor:—I now have under treatment a case of dermatitis covering both hands and extending up the arms, with some involvement of both legs at times which seems to be from local irritation—something in the man's occupation. He is a plumber and does work with copper and solder which, he says, causes irritating fumes. His physical examination is negative other than a slight trace of albumin in the urine. The skin condition began about a year ago; it ran a very acute course for one month, and then subsided into a subacute irritation. Do you think this is dermatitis from local irritation? What would be the best general and local treatment? The man is working every day.

K. A. A., Michigan.

Answer.—The history of this case would suggest that one must rule out external irritants before anything else. It is highly probable that external irritants in the occupation are producing the dermatitis. There are many things used by a plumber which might be at fault. If the trouble is due to external irritants they are almost certain not to be gotten rid of until the man is taken away, temporarily at least, from them by stopping his occupation. The case could be well tested by taking the man absolutely away from his work and putting on wet dressings of the following formula:

Aluminum subacetate solution, N. F. IV	30 cc.
Water	to make 500 cc.

Under treatment of this sort, he ought to show rapid improvement. After this treatment has been used for several days—probably about a week—and his hands have gotten much better, he can then substitute for the wet dressings a bland ointment. For this purpose nothing is better than ordinary cold cream. The dressings spread with this should be on his hands for a while; then the dressings should be left off and the hands greased and gloves worn most of the time. In this way, if he gets away from the irritants of his occupation he will probably get rapidly better if not clean up entirely. Then he can go back to his occupation cautiously, and carefully test out the various materials to see what is producing the irritation.

CREAM SOUP

To the Editor:—In the book, "Infant Feeding" by Julius H. Hess there is mentioned in the diet of an infant of from 9 to 12 months "cream soup." Will you kindly advise the formula of a cream soup for an infant of this age?

Frank A. M. Bryant, M.D., Mount Vernon, N. Y

Answer.—Cream soups may be made from vegetable pulp, using one tablespoonful of cooked potatoes, peas or asparagus to one-half cup of water in which the vegetables were cooked, one-half cup of sweet milk, and one-half teaspoonful of flour, with a little butter and salt. It should be cooked another minute or two, and strained if necessary.

Corn or tomatoes may be used in the same manner, using two tablespoonfuls of strained vegetables with about one-third water and two-thirds milk. When tomatoes are used, a small pinch of soda should be added to the tomatoes before adding the other ingredients.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.

California: Los Angeles, March 8-11. Sec., Dr. Charles B. Pinkham, Room 906, Forum Bldg., Sacramento.

Connecticut: Basic Science Board, New Haven, Feb. 13. Chairman, Mr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, Hartford, March 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Board, New Haven, March 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Kansas: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

Maine: Portland, March 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Massachusetts: Boston, March 9-11. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

Missouri: Jefferson City, March 9-11. Chief, Licensure, Dr. Ross Hopkins, Capitol Bldg., Jefferson City, Mo.

National Board of Medical Examiners: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

New Hampshire: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

Oklahoma: Oklahoma City, March 9-10. Sec., Dr. J. M. Byrum, Shawnee.

Philippine Islands: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

Porto Rico: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.

Vermont: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

Idaho October Examination

Mr. F. A. Jeter, ex-officio secretary of the Idaho Medical Examining Board, reports the written examination held at Boise, Oct. 6-7, 1925. The examination covered 13 subjects and included 130 questions. An average of 75 per cent was required to pass. Six candidates were examined, all of whom passed. Four candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
College of Medical Evangelists	(1925)	86.3
University of Colorado School of Medicine	(1912)	85
General Medical College, Chicago	(1924)	78.6
Northwestern University Medical School	(1903)	84
State University of Iowa College of Med...(1923) 88,	*(1924)*	86

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Denver and Gross College of Medicine	(1906)	Washington
Georgetown University School of Medicine	(1914)	Washington
College of Physicians and Surgeons, Chicago	(1894)	Montana
Hahnemann Medical College and Hospital, Chicago	(1916)	Oregon

Minnesota October Examination

Dr. Thomas McDavitt, secretary of the Minnesota Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Oct. 6-8, 1925. The examination covered 15 subjects and included 80 questions. An average of 75 per cent was required to pass. Eighteen candidates were examined, all of whom passed. Twenty-five were licensed through reciprocity, and 7 by endorsement of their credentials. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
Rush Medical College	(1925)	89
University of Louisville School of Medicine	(1925)	82.1
Harvard University	(1923)	86
University of Minnesota Medical School....(1924) 83.7, 85.3, 89.1, 92, (1925) 85, 86.9, 87.6, (1925)* 88, 88.8, 93		
St. Louis University School of Medicine	(1925)	85.5, 87.2
Washington University School of Med....*(1923) 89.7,*	*(1924)*	86.6
University of Nebraska College of Medicine	(1925)	88.1

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of [illegible]	[illegible]	Colorado
Hahnemann Medical College and [illegible]		Illinois
Northwestern University Medical [illegible]		Illinois
Rush Medical College	[illegible]	California
State Univ. of Iowa College of Med..(1906), (1920),	(1924)	Iowa
Detroit College of Medicine and Surgery	(1924)	Michigan
University of Michigan Medical School	(1923)	Michigan
University [illegible] School	(1924)	Penna.
Creighton [illegible]	(1924, 2)	Nebraska
University [illegible] of Med...(1923),	(1924)	Penna.
University of Pittsburgh School of Medicine	(1924, 2)	Penna.
University of Tennessee College of Medicine	(1924)	Tennessee
University of Virginia Department of Medicine	(1922)	Virginia
Marquette University School of Medicine	(1924, 2)	Wisconsin
University of Toronto Faculty of Medicine	(1922)	N. Dakota
University of Western Ontario Medical School	*(1901)*	N. Dakota
Licentiate of the Royal College of Physicians and Surgeons, London	(1923)	New Jersey
University of Wurzburg, Germany	*(1909)*	Wisconsin

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College	(1925, 2)	N. B. M. Ex.
Harvard University	*(1922)*	N. B. M. Ex.
University of Nebraska College of Medicine	(1923)	N. B. M. Ex.
University of Oregon Medical School	(1924)	N. B. M. Ex.
University of Virginia Department of Medicine	(1924, 2)	N. B. M. Ex.

* These candidates have finished their medical course, and received their M.B. degrees, and will receive their M.D. degrees on completion of a year's internship in a hospital.

North Carolina November Reciprocity Meeting

Dr. K. P. B. Bonner, secretary of the Board of Medical Examiners of North Carolina, reports that 17 candidates were licensed by reciprocity, and two by endorsement of their credentials at the meeting held at Raleigh, Nov. 25, 1925. The following colleges were represented:

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Southern Medical College, Atlanta	(1898)	Georgia
University of Georgia, Medical Department	(1907)	Georgia
Northwestern University Medical School	(1911)	Illinois
Tulane University of Louisiana School of Medicine	(1910)	Louisiana
Johns Hopkins University Medical Department	*(1916)*	*Mass.*
(1920) Maryland		
College of Physicians and Surgeons, Baltimore	(1915)	W. Virginia
Bellevue Hospital Medical College	(1892)	Virginia
Cornell University Medical College	(1905)	New York
Leonard Medical School, Raleigh	(1902)	S. Carolina
Jefferson Medical College of Philadelphia	(1895)	Penna,
(1915), (1917) South Carolina		
Medical College of the State of South Carolina	(1915)	S. Carolina
Memphis Hospital Medical College	(1900)	Arkansas
Medical College of Virginia	(1908)	Virginia
University of Toronto Faculty of Medicine	(1908)	New York

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Maryland School of Medicine	(1916)	U. S. Army
University of Pennsylvania School of Med	(1924)	N. B. M. Ex.

Book Notices

The Histology of the More Important Human Endocrine Organs at Various Ages. By Eugenia R. A. Cooper, M.D., Demonstrator of Anatomy, Victoria University of Manchester. Cloth. Price, $4. Pp. 119, with 63 illustrations. New York: Oxford University Press, 1925.

This book presents briefly and clearly the results of a study of the human hypophysis, suprarenal gland, thyroid, parathyroid and thymus. The study was concerned with the life histories of each of these glands and follows the changes they undergo, from their earliest appearance in embryos, throughout childhood, youth and full development, to the degenerative phenomena of old age. In order that the comparative feature of the study may be more valuable, only one means of fixation has been used throughout, and the methods of staining have been reduced to three: (1) hemalum and aqueous eosin; (2) alcoholic eosin and aqueous methylene blue; (3) Mallory's saure-fuchsin and phosphomolybdic acid connective tissue stain. The literature has been consulted, and the results reported by 112 other workers have been adduced in support of the author's observations, although she has covered the field with her own material and has not substituted other studies for direct observations of any stage. These studies are purely anatomic, and no attempt is made to carry them over into considerations of function; nor is there any excursion into the alluring field of comparative anatomy and evolution. The book presents, therefore, the simple statement of original observations on exclusively human material throughout the various stages of the life history of these interesting structures. It will be of great interest to physiologists, pathologists and clinicians to whom the question constantly presents itself as to whether conditions found represent different stages of cytomorphosis or pathologic changes outside the normal life history. The illustrations have been made mainly from photographs, which do not show the details of cell structure as clearly as will be desired by the student of cytology, although they are, of course, accurate and interesting within the limits of this method of illustration. One colored plate with four figures adds considerably to the presentation of observations on four of these glands. The contribution is a valuable one, which might well be supplemented by similar studies after other fixations presenting more minutely the structure of the gland cells.

BATS, MOSQUITOES AND DOLLARS. By Dr. Charles A. R. Campbell. Cloth. Price, $3. Pp. 262, with illustrations. Boston: Stratford Company, 1925.

This is a somewhat wordy but entertaining account of the author's experiments, during the last twenty-five years, in an attempt to destroy mosquitoes and thereby control malaria by means of the so-called mouse bat described as the arch enemy of the mosquito. After many failures and discouragements, Dr. Campbell was finally able to build a "roost" which the bats inhabited and in which they multiplied. No detailed description of this roost is given. In view of the oft repeated accusation that opponents of this method of mosquito control are intensely ignorant of its advantages, it is somewhat embarrassing to render what would be regarded as unprejudiced judgment. However, it may be safe to suggest that the difficulties admittedly involved throw a somewhat dubious aspect over its practicability. Even the possibility of a financial return from the bat guano will hardly serve to stimulate the development of a bat breeding industry. The volume contains a chapter on dragon flies as mosquito enemies, a discussion of the functions of the spleen, and some observations on the transmission of smallpox by bedbugs. The author maintains that the spleen is provided for the sole purpose of destroying the malarial parasite. The bedbug transmission theory for smallpox is hardly convincing.

DIE EXPERIMENTELLE PHARMAKOLOGIE ALS GRUNDLAGE DER ARZNEIBEHANDLUNG. Ein Lehrbuch für Studierende und Aerzte. Von Dr. Hans H. Meyer, Professor in Wien, und Dr. R. Gottlieb, weiland Professor in Heidelberg. Seventh edition. Paper. Price 27 marks. Pp. 792, with 89 illustrations. Berlin: Urban & Schwarzenberg, 1925.

A conspicuous feature of this work is the stress on the philosophical aspect of pharmacology based on experimental and clinical evidence. The subject matter is arranged according to physiologic functions, in contrast with the arrangement according to groups of drugs originally employed by the older pharmacologists Buchheim and Schmiedeberg, and still adhered to in most textbooks on the subject. In this respect this book stands by itself. The physiologic classification necessitates the repeated mention, and sometimes discussion, of drugs; but this feature is not as objectionable as at first appears, because the authors have limited themselves to worthy drugs and the discussions are therefore actually limited. The more than occasional employment of trade mark names and reference to proprietary products is regrettable but not surprising, in view of the total lack of control of therapeutic products and the strong commercial influences in most continental countries, as contrasted with the restraining and beneficial influences of the Council on Pharmacy and Chemistry in this country. Fortunately, this part is counterpoised by telling descriptions and thorough analyses, coupled with interesting practical comparisons and well selected illustrations and diagrams, all this making it one of the most readable, enjoyable and informative textbooks on pharmacology. It is understood that an English translation is forthcoming. While the book may not be suited to present arrangements for the teaching of pharmacology in many American medical schools, yet teachers will not do without it and medical students will find it a useful and inspiring supplement to their other textbooks, especially for discussions of the autonomic nervous system, temperature regulation and fever, and colloid or nonspecific therapy. Practitioners will gain new inspirations, refresh their knowledge and make contacts with drugs in ways that no other book provides. The appearance of the seventh edition fifteen years after the first is sufficient testimony to the popularity of the book. This edition differs in no essential respect from the previous ones. There are no important revisions, and the few revisions that have been made have been worked in as rather inconspicuous notes in small print. The chapter on circulation remains unchanged. The present edition is sixty-eight pages longer than the previous one. This book has always made liberal reference to the work of American authors, probably more than all other foreign textbooks on pharmacology combined. A new feature is a twenty-three page alphabetical list of authors referred to in the text. It is the most comprehensive of all foreign books and compares favorably with that of Sollmann in this country. Unfortunately for pharmacology and medicine, Gottlieb has gone to his reward, and Meyer, because of advanced age, has retired. The seventh edition, therefore, may be the last. This loss of the inspiration and leadership of the authors of "Die experimentelle Pharmakologie" is a matter of personal regret to their many American friends and students.

BACTERIAL INFECTIONS, WITH SPECIAL REFERENCE TO DENTAL PRACTICE. By J. L. T. Appleton, Jr., B.S., D.D.S., Professor of Microbiology and Bacteriopathology, the Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania. Cloth. Price, $6. Pp 474, with 96 illustrations. Philadelphia: Lea & Febiger, 1925.

The text is divided into three parts: (1) bacteriology; (2) infection, and (3) infection of the oral cavity. The first has five chapters on the morphology and physiology of bacteria, the relation of bacterial growth to oxygen supply, chemical disinfectants, filtrable viruses, and the classification of bacteria. In the second part, twelve chapters are devoted to such subjects as the nature and types of infection, how bacteria produce disease, resistance to bacterial infection, and immunity. The eleven chapters of the third part concern such matters as the bacteriology of dental caries, of periapical infections and of pyorrhea; focal infection; tuberculosis; syphilis, and the spirochetes of the mouth. The preface suggests that this book is designed to be "suitable for the beginner" as well as for the advanced student. The few introductory chapters do not prepare the beginner for the difficult discussion of infection and immunity that follows. The difficulties of the beginner are increased by the author's fondness for words of many syllables, for long sentences, and for involved grammatical construction. On the other hand, the advanced student interested in the dental phases of infection will find the book invaluable because of its many references to the original sources and its descriptions of technical methods especially adapted for the study of mouth bacteria. In many instances the matter could have been better arranged. The discussion of the methods for the routine sterilization of the dentist's instruments does not belong in the chapter on the physiology of bacteria. The subjects of the pathology of pyorrhea and the details of its treatment by vaccines are not well placed in the second part of the book under the title of artificial active immunization. The physical appearance of the book is all that it should be. Seventy-eight of the illustrations are reprinted from other books, and five are colored plates. There is a complete subject index.

SLIT-LAMP MICROSCOPY OF THE LIVING EYE. Early Diagnosis and Symptomatology of Affections of the Anterior Segment of the Eye. By Dr. F. Ed. Koby. Translated by Charles Goulden, O.B.E., F.R.C.S., Surgeon to the Royal London Ophthalmic (Moorfields) Hospital, and Clara Lomas Harris, M.B., Chief Clinical Assistant, Royal London Ophthalmic (Moorfields) Hospital. Cloth. Price, $3.50. Pp. 221, with 43 illustrations. Philadelphia: P. Blakiston's Son & Co., 1925.

This is the forerunner of what promises to grow into a vast library. Although slit lamp microscopy of the living eye has been known and practiced abroad for thirteen years and in this country for seven years, there has not been a single book in the English language on this newer phase of ophthalmology. The proper description of this method of examination is "binocular microscopy of the living eye with focal illumination in varying azimuths." To shorten this, Edward Jackson suggested the term biomicroscopy, which bears promise of earning a place in our vocabulary. The nine chapters are divided among the apparatus, methods of examination, phenomena of reflection of light by the ocular media, and description of the various ocular tissues examined. The first chapter is fairly comprehensive, but should have been written somewhat more simply, with more illustrations. In the second chapter, under the methods of illumination, no mention is made of the important method known as sunset illumination. Otherwise, the chapter is fairly good, although a novice would find some difficulty in learning to use the instrument if entirely dependent on the directions given.

From here on, the technic of examining the different ocular tissues is described and the normal appearance of each tissue discussed briefly. Some of the pathologic conditions encountered are considered in more or less detail. The bibliography is not complete, but is sufficient for the beginner in the art. The illustrations are for the most part diagrammatic and hence really instructive. In lieu of an extensive library on biomicroscopy, one might well read this.

Die Krebskrankheit. Ein Zyklus von Vorträgen. Herausgegeben von der österreichischen Gesellschaft zür Erforschung und Bekämpfung der Krebskrankheiten. Paper. Price, 18 goldmarks. Pp. 356, with 95 illustrations. Vienna: Julius Springer, 1925.

In 1924 the Austrian Society for Investigation and Combating Cancer instituted a week of lectures in the Vienna medical faculty, for the purpose of providing virtually a postgraduate course on cancer and a summary of our knowledge to date. The thirty lectures of this course, by nearly as many lecturers, are published in this volume, and they furnish a recapitulation of the subject, presenting the matured opinion of experienced clinical and laboratory observers, each discussing his own special field. The first six lectures take up the general features of cancer—morphology, etiology, malignancy, biochemistry, heredity, statistics, and experimental cancer. The remaining twenty-four lectures discuss cancer of the various tissues and organs of the body. Sarcoma and other noncarcinomatous forms of malignancy are not discussed, but a lecture is given on chorio-epithelioma. Naturally among so many lectures there is great unevenness, and no single lecture on any aspect of cancer can be complete or final; but certainly the discussion of etiology by Maresch is inadequate, and the discussion of biochemistry of cancer by Freund is, as might be expected, devoted soley to a presentation of the ideas of Freund and Kaminer on this subject. On the other hand, the section on experimental cancer study, by Kraus, is a much more adequate presentation. In connection with the recent revival in interest in filtrable viruses, it may be mentioned that Kraus seems inclined to favor the view that the "filtrable virus" of chicken sarcoma is really nothing but fragments of cancer cells which possess the capacity to develop into complete cancer cells. Especially satisfactory is the discussion of the relation of constitution to cancer by the genetecist Julius Bauer, who recognizes inherited influences as to both cancer occurrence and the site or type of the cancer. Peller has a judicial analysis of cancer statistics, recognizing the limits of their value, and throwing doubt on the supposed serious increase in cancer frequency. The sections in the special part, written by specialists discussing familiar fields, are generally as adequate as the limits of a lecture permit. The lack of bibliography is a distinct defect, which may or may not be compensated by the space and cost saved.

Dental Infections. In two volumes. By Weston A. Price, D.D.S., M.S., F.A.C.D., Specialist in Dental Research and the Diagnosis, Prognosis, and Treatment of Dental Infections. Volume I. Dental Infections, Oral and Systemic. Cloth. Price, $10. Pp. 703, with 262 illustrations. Volume II. Dental Infections and the Degenerative Diseases. Cloth. Price, $10. Pp. 471, with 209 illustrations. Cleveland: The Penton Publishing Company, 1923.

Volume I contains the discussion of the results of the author's "researches on oral and systemic expressions of dental infections." Here he formulates forty-five questions such as: "To what extent are the roentgen rays capable of disclosing dental infections? What is the relationship of the quantity of dental infection to the type and extent of systemic involvement? What, if any, is the relationship between dental infections and carbohydrate metabolism? What is the rôle of calcium in the maintenance of the acid-alkali balance of the blood, through body fluids and tissues?" The development of answers to these questions by the massing of experimental data and the deductions made from them, all of which are summarized on the last pages, constitute the first volume. In volume II, an effort is made to apply the conclusions derived from the preceding volume to a study of the inflammatory diseases of the various organ systems, as, for example, the circulatory system. It is obvious that these investigations cover a very wide field, including a number of sciences in which the technic of research is highly specialized, such as the physics of the emanations from the roentgen ray and radium; the chemistry of metabolism, and immunology. The author's conclusions and observations fall into two general groups: those that are generally accepted or do not differ in any essential respect from the facts and deductions presented by other investigators, that is, those that need no emphatic affirmation, and those observations and conclusions that do not at all harmonize with those of other workers. Unfortunately, for the most part, in the last group the experimental methods used by the author to develop his data are not stated with sufficient detail and accuracy to enable another worker to repeat the author's experiments in order to verify his results. Furthermore, his conclusions are developed with such deductive nimbleness and are of such far-reaching significance on the basis of comparatively slight experimental evidence that little confidence may be placed in them. Both the evidence and the conclusions require confirmation by independent, competent investigators. The volumes are profusely and elaborately illustrated by original photographs of both gross and microscopic material; there are numerous diagrams and many elaborate tables. Both volumes are carefully indexed, and at the end of volume II there is a short bibliography.

Water Works Practice. A Manual issued by the American Water Works Association. Cloth. Price, $5. Pp. 790. Baltimore: Williams & Wilkins Company, 1925.

There has long been need of an authoritative and comprehensive book on water supply which should take cognizance of the great advances of the last two decades. This need has now been met in admirable form by a book which exemplifies the best features of cooperative activity. It deals in considerable detail with such topics as the collection of water, the quality of the supply, the treatment and distribution of water, and the financing and planning of water works. A valuable appendix gives exact data on various standard specifications and procedures, such as specifications for chemicals used in water purification and specifications for sanitary drinking fountains. The tone of the book is conservative, and the mass of detail has been put together with remarkable accuracy. This is the most useful book on water supply now in existence. The Council on Standardization of the American Water Works Association, under whose auspices the manual has been prepared, is to be congratulated on the completion of a task which was undoubtedly laborious and must often have been tedious, but the results of which will be of inestimable value to all practical workers interested in water supply.

An Elementary Manual of Physiology. For Colleges, Schools of Nursing, of Physical Education, and of the Practical Arts. By Russell Burton-Opitz, S.M., M.D., Ph.D., Associate Professor of Medicine, New York Post-Graduate Medical School. Second edition. Cloth. Price, $2.50 net. Pp. 413, with 147 illustrations. Philadelphia: W. B. Saunders Company, 1925.

This is admirably adapted for the purpose for which it is intended, a textbook for colleges, schools of nursing and schools of physical education. The material is arranged logically, progressing from the comparatively simple phenomena of contraction to blood and circulation, the chemical changes of respiration and metabolism, and the regulation of the body function through the endocrine glands and the central nervous system. The book is profusely illustrated, and only a few of the illustrations might have been left out without decreasing the value of the manual.

Elements of Surface Anatomy for Students of Medicine. By I. Maclaren Thompson, B.Sc., M.B., Assistant Professor of Anatomy, McGill University, Montreal. Cloth. Price, 5 shillings, 6 pence net. Pp. 172. Edinburgh: E. & S. Livingstone, 1925.

This little book is intended to be a guide for small groups of students who study on one another surface landmarks and markings. It does not include surface markings for all underlying structures, but only such as are useful in surgical and clinical work. It is accurate and is arranged in accordance with a logical and convenient plan. It affords admirable guidance in the study of this subject, which deserves more attention than is usually given it in the medical curriculum.

Medicolegal

Provision Requiring Physician's Reports Upheld

(American Nat. Ins. Co. v. Burns (Texas), 273 S. W. R. 339)

The Court of Civil Appeals of Texas says that plaintiff Burns on account of alleged total disability from injuries sustained on or about Feb. 1, 1923, brought this action to recover the full amount of an accident insurance policy which provided for the payment of $100 a month for not exceeding thirty-six months in case of total disability. However, the policy contained a provision that

> If the insured is disabled by injury or illness for more than thirty days, he or his representative shall, as a condition to recovery hereunder, furnish the company, every thirty days, with a report in writing from his attending physician or surgeon, fully stating the condition of the insured and the probable duration of his disability.

The evidence showed that, in compliance with the terms of his policy, the plaintiff, Feb. 15, 1923, informed the defendant company of his injury. This notice of claim was accompanied by a preliminary report from the plaintiff's physician, stating that he had examined the plaintiff and found him suffering from an injury to his left knee and the flexor muscles of his left leg, which were badly sprained; that this injury totally disabled the plaintiff from performing the duties of his occupation; and that, in the physician's opinion, the injury would last about sixty days. In response to this notice of claim for compensation, the defendant wrote the plaintiff, February 23, enclosing a blank form for final proof of loss. No further report was made by the plaintiff as to his condition until Sept. 22, 1923, when he sent the defendant the filled-in proof of loss. The court holds that, under the plain and unambiguous terms of his contract, the plaintiff was not entitled to receive any compensation for disability extending more than thirty days after the notice of claim and report of his condition sent the defendant, February 15.

There is, the court thinks, nothing unreasonable in this provision of the policy requiring an insured, who claims compensation for disability caused by an injury or sickness which lasts longer than thirty days, to keep the company informed of his condition by furnishing it with his physician's report every thirty days. Such requirement is manifestly made for the protection of the company against fraud and imposition, and when we consider how numerous and widely distributed the beneficiaries in such policies may be, efficient protection of the company could not be otherwise secured except at such additional costs to the insurance companies as would necessarily increase the costs of such insurance. Such a provision in a policy of this kind cannot be held to be against public policy. Nor is such a provision rendered void by the Texas statute which provides that any stipulation in any contract requiring notice to be given of any claim for damages as a condition precedent to the right to sue thereon at a period of less than ninety days shall be void, because that statute does not apply to a provision like that in this policy, which cannot be regarded as a "stipulation requiring notice to be given of a claim for damages."

Declarations of Insanity—Observations of Physicians

(Burris v. State (Ark.), 273 S. W. R. 19)

The Supreme Court of Arkansas, in affirming a judgment of conviction of murder in the second degree, says that there were assignments of error with respect to the trial court's refusal to permit two witnesses to testify concerning statements made to them orally and in writing by defendant Burris. These statements were to the effect that the defendant was insane. One of the witnesses would have testified that he had received a letter from the defendant in which the defendant stated that physicians had advised him that he was bordering on insanity. The other witness, who was the defendant's mother, testified that at one time the defendant, while working on some machinery, had said to her, "Don't bother me, you can't realize the condition I am in; I don't know a thing." These were statements of self-serving declarations of the defendant himself, and were not competent. Of course, the nonexpert witnesses should have been permitted to tell of their observations of the defendant, and of any unusual conduct of his which tended to show that his mind was unbalanced; but a mere statement, whether made orally or in writing, that he believed himself to be insane, was not such a statement as could properly form the basis of an opinion as to his mental condition. These witnesses were allowed to testify as to other facts which influenced them in concluding that the defendant was mentally unbalanced. His mother testified as to his condition from infancy, giving an account of diseases which had begun in early childhood, and relating many instances on which she based her conclusion that he was not of sound mind. The supreme court thinks that there was no error committed in excluding the testimony concerning the defendant's statement of his own mental condition.

Two physicians testified that they had been acquainted with the defendant for a number of years, had practiced in his family, and had treated him for disease on different occasions. Over the objection of the defendant, they were permitted to testify as to his mental condition. It was contended that this was error. But the Arkansas statute excludes only the testimony of a physician as to information "necessary to enable him to prescribe as a physician." The statute does not exclude all the testimony of a physician because he has attended the person in a professional capacity; the exclusion is limited to information which was necessary to enable the physician to prescribe. Neither of these witnesses had ever examined the defendant as to his mental condition, or treated him for mental disease, and they both testified that they were basing their opinions on mere observations of the defendant during their acquaintance with him as family physician, and by observing him while he was on the witness stand, but not from any information received for the purpose of treating him, although one of the physicians said that on one occasion he gave the defendant medicine for nervous trouble, but did not examine him with a view of ascertaining his mental condition, or treat him for any mental disease. Counsel relied mainly on the announcement of the law on the subject made by this court in *Triangle Lumber Co.* v. *Acree*, 112 Ark. 534, 166 S. W. 958, but this court finds nothing on examination of the opinion in that case which would justify this court in holding that this testimony was incompetent.

Account Stated Not Created by Bills Sent to Mother

(Swim v. Juhl et al. (Calif.), 237 Pac. R. 552)

The District Court of Appeal of California, First District, division 2, in affirming an order granting a nonsuit, says that the plaintiff sued on an assigned claim for medical services alleged to have been rendered to a Mrs. Bradley, with whom as a defendant were joined as other defendants Mrs. Juhl and husband (Mr. Juhl), on the theory that Mrs. Juhl, who was the mother of Mrs. Bradley, had promised to pay for the services rendered her daughter. The Juhls answered, and went to trial before the court sitting without a jury. At the close of the plaintiff's case, the court, on motion of these two defendants, granted a nonsuit. The complaint was framed on two causes of action—one for the reasonable value of the medical services rendered; the other, an account stated (one agreed on by being rendered and accepted). On this appeal the plaintiff conceded the correctness of the ruling as to the first cause of action, because, the employment of the physician having been made by the daughter, and the alleged agreement of the mother to pay in case of the daughter's default not having been in writing, and having been made subsequent to the employment, the mother's contract was void because of the provisions of the statute of frauds.

As to the second cause of action, the evidence was that, after the services had been rendered, and after the daughter had been released from the hospital, the plaintiff's assignor (the physician) sent a bill for his services to her, and, receiving no reply from her, sent two or three bills for the same account to Mrs. Juhl. No reply was received from the latter, and on this fact the plaintiff based his claim of an account stated. His theory was that, conceding the original contract of the mother to answer for her daughter's default to be void because not in writing, her failure to object to the bills when rendered created a new contract, which was not controlled by the statute of frauds. The answer was that an account can be stated only when based on an existing legal obligation, and, the promise of the mother being void because of the statute of frauds, no valid contract could be created by the purported statement of account. The defendants also argued that the question of the reasonableness of the time within which the mother failed to object to the bill was a question of law for the court, and that on this appeal the court of appeal must assume that the trial court held that a reasonable time had not elapsed.

The absence of a writing to answer for the daughter's default rendered the mother's original agreement void, so that there was no legal obligation on which the account could be stated. Though the contract with the daughter for the performance of the services was executed (performed), the contract of the mother to answer for the daughter's default was unexecuted. As an account stated cannot create a liability where none has theretofore existed, and as the oral promise of the mother to answer for the default of her daughter was void because not in writing, it followed that the attempt to state an account without any writing on the part of the party sought to be charged did not create any liability enforceable against her.

Hearing denied by the Supreme Court of California.

Essentials When Dislocation or Fracture Is Issue

(McDonald v. Crider (Mo.), 272 S. W. R. 980)

The Kansas City (Mo.) Court of Appeals, in reversing a judgment for $2,500 damages rendered in favor of the plaintiff, says that the facts, taken in their most favorable light to the plaintiff, showed that she had sustained a dislocation of the ulna of her right arm, but that the defendant had diagnosed the case as one of a tranverse Colles fracture of the radius. There was a great deal of evidence in the record tending to show that a Colles fracture had actually been sustained, although there was also evidence to go to the jury that such a fracture had not been sustained, but a dislocation of the ulna. The evidence showed that, at the time of the trial, the lower end of the ulna was broken loose from its attachment at the wrist joint and dropped out of place; that the ulna and radius had pulled apart; that the radius alone was in position and the only bone that then articulated with the hand. The defendant admitted at the trial that he did not discover the dislocation of the ulna, if any, and the fact that it had broken loose from the radius.

The plaintiff's petition was founded on alleged negligence and unskilful conduct of the defendant. It is well settled that cases of this kind are based on negligence. A physician is not liable solely because of want of success. The defendant was required to use only that degree of knowledge and skill that physicians practicing in similar localities ordinarily possess. Of course, he was liable if he failed to use that degree of care and skill of the ordinary physician of similar localities in diagnosing or discovering the true condition of the plaintiff's arm. But there should be some testimony tending to show that a physician of ordinary skill in the locality in question, and by the means at hand, could have discovered the dislocation or differentiated between it and a Colles fracture; or whether or not a physician of such skill should have waited until the swelling subsided (if it would) before determining on the character of the injury, or whether, if he was in the exercise of ordinary care in diagnosing the trouble as a Colles fracture under the circumstances, he should have made a further examination after the swelling had subsided.

An instruction was erroneous which covered the entire case, told the jury that there was only question in the case for its determination, and directed it to find the issues for the plaintiff if the defendant failed properly to reduce and treat the dislocation or fracture, or failed to give proper and necessary directions for the care of it, or failed to exercise such care and skill as was used by the average members of his profession under like circumstances—without having the jury find the defendant's failure to exercise care and skill under the circumstances was the proximate cause of the plaintiff's condition. An instruction which told the jury that, if it found the issues in favor of the plaintiff, it should assess her damages in such sum as it believed properly to compensate her for her pain, suffering and mental anguish, if any, as well as the loss of the use of her hand from her ordinary work and duties of life, if any, was erroneous in that it should have made it plain that the defendant was not responsible for any bodily or mental suffering endured by the plaintiff, which was due to her injury and would have resulted to her in any event, though treated with ordinary care and skill.

Testimony Admissible When Roentgenograms Are Lost

(Spellmeyer v. Theo. Hiertz Metal Co. (Mo.), 272 S. W. R. 1068)

The St. Louis (Mo.) Court of Appeals says that in this action to recover damages for personal injuries objection was made to the testimony of a physician concerning roentgenograms which he had made of the plaintiff, but which were not in evidence. It was contended that, since the roentgenograms constituted the best evidence, it was error to permit the witness to state what injuries he had found by reason of his examination of the roentgenograms. There is room for the position that the interpretation of roentgenograms by an expert is the best evidence, and not the roentgenograms themselves, since roentgenograms must be interpreted and explained by an expert. But, assuming that the roentgenograms in question were the best evidence, it was established that they had been lost and that a diligent search had been made for them without finding them; and, under such circumstances, this court thinks that the trial court properly permitted the physician to testify and state as to his knowledge of the plaintiff's injuries regarding which he had been aided through an examination of the roentgenograms. After all, it is largely within the discretion of the trial court as to when secondary evidence should be admitted.

Employer's Contract to Furnish Medical Attention

(Sloss-Sheffield Steel & Iron Co. v. Maxwell (Ala.), 104 So. R. 841)

The Court of Appeals of Alabama, in affirming a judgment in favor of plaintiff Maxwell for damages for breach of contract, says that the plaintiff alleged that a contract had been entered into between him and the defendant company by which, in consideration of the collection by the defendant of $1 a month from the plaintiff's wages, the defendant agreed to furnish him with medical attention if he became sick while in its employment. It appeared that about Sept. 1, 1920, he had a severe attack of rheumatism, called the defendant's physician, and was treated by him until the latter part of April or the 1st of May, 1921; that, on the occasion of the last treatment, the physician told him to return to his office in two or three weeks; that he got so that he could not walk, and sent for the physician about May 23; and that as the result of the physician's failing or refusing to administer to him further treatment during the month of May, he suffered the injuries for which he sued. The defendant contended that it was under no duty to furnish, through its physician, any treatment to the plaintiff during the month of May, because the $1 a month which the plaintiff was due to pay under his contract had not been actually paid for that month.

It seems to be generally recognized that, when an employer makes a valid contract with an employee to furnish medical attention in case of sickness or injury, and fails to do so, there is a liability on the part of the employer to the employee resulting from such failure. It was without dispute that the $1 for the month of April had been paid to or reserved by the defendant. In *Scanlon* v. *Galveston, H. & S. A. Ry. Co.*, 86 S. W. 930, where it was shown that the monthly deduction of wages was made with the understanding that the employee, when sick or injured, should be entitled to hospital benefits at the defendant's expense, the Court of Civil Appeals of Texas said that "this would imply and mean, in the absence of an understanding to the contrary, the continuance of the benefits while the sickness or injury required same." The Court of Appeals of Alabama thinks the Texas court stated the situation correctly. But, even if the foregoing were n-so, from the way that the payments were collected they could not have been due and payable in advance, and the plaintiff had until May 31 within which to make payment of the $1 due from him for the month of May, there being no suggestion that he had been discharged from the defendant's employment.

It was contended that, as to the $1 a month deducted from the plaintiff's wages, the defendant was a "noncompensated gratuitous trustee"; but this court does not agree with that contention, notwithstanding that there was testimoney that from the fund created by the $1 a month deductions from the wages of those situated as was the plaintiff the physician employed by the defendant was paid, and that, if there was any left over, it went into the welfare fund which was used by the defendant for the benefit of the employees and welfare. All this meant nothing, the court thinks, so far as the plaintiff was concerned. He paid his $1 a month to the defendant in consideration of its agreement to furnish him medical attention as and when he required it. What the company did with the dollar was no concern of his.

The Supreme Court of Alabama, in *Ex parte Sloss-Sheffield Steel & Iron Co.*, 104 So. 843, denied the company a writ of certiorari to the court of appeals, to review and revise the judgment and decision of the latter court rendered as above.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.
American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.
New York, Medical Society of the State of, New York City, March 29-April 1. D. S. Dougherty, 17 W. 43d St., New York City, Secretary.

CHICAGO MEDICAL SOCIETY

Meeting held Jan. 20, 1926

Dr. M. L. Harris, Chicago, in the Chair

The Technic and Interpretation in Cholecystography by the Oral Method

Dr. William H. Stewart, New York: Up to the time of the discovery of the "Graham test," roentgenography of the gallbladder has been distinctly unsatisfactory. In not over 50 per cent of the cases is it possible to make any sort of reliable findings, and these, as a rule, are all late effects of gallbladder disease. The intravenous injections of tetrabromphenolphthalein and tetra-iodophenolphthalein, as recommended by the originators of the method, are disastrous to the patient. It has become evident that the method must be simplified so that it will be safe and can be used as an office procedure, not requiring hospitalization. Whitaker and Milliken have shown that the same results can be obtained with one-half the amount of tetra-iodophenolphthalein as with tetrabromphenolphthalein. With this knowledge I began the use of the iodine salt made up in 5 grain keratin coated pills. In September, 1925, I had the dye supplied in sealed colored ampules, a single dose in each. When ready for use, the fresh drug from the ampules is placed in plain gelatin capsules which are dipped into a solution of keratin. This seals them air tight and covers them with a coating which prevents their being broken up in the stomach. I have had no reaction, unless one classifies as such a slight nausea, one or two loose movements or an occasional vomiting attack. Patients appear at the office the morning following the administration of the dye and are strong enough to undergo the examination, without food for about eighteen hours, and with no inconvenience.

In making a roentgenographic examination of the gallbladder by the oral method, the following technic must be accurately followed: The gastro-intestinal tract should be thoroughly cleansed. This is best accomplished by a mild cathartic administered the night before the examination, followed by a simple enema in the morning. The preliminary examination of the gallbladder, before the administration of the dye, is best made in the afternoon. At 6:30 p. m., the following meal is advised: a thick soup, creamed chicken, baked potato if desired, bread and butter, and a glass of milk. Commencing at 10 p. m. two 5-grain capsules of tetra-iodophenolphthalein prepared as recommended are given every fifteen minutes with a small glass of water until 45 grains (3 Gm.) has been taken, which is the average dose for a patient weighing 150 pounds (68 Kg.). The patient reports at the office the following morning at 10 o'clock, twelve hours after the administration of the dye, "no breakfast" being the rule. Four hours later, at 2 p. m., the examination is repeated. Regular lunch is then allowed, followed by a reexamination one hour later. The patient reports the next morning for a final observation. At least three roentgenograms should be made at each observation. It is well to develop one of these to make sure that the position and exposure are correct. The most important of the direct signs is the actual visualization of nonopaque stones. The second direct sign is deformity of outline. When adhesions are caused by chronic inflammation of the gallbladder wall, the shadow is deformed and the edges are likely to be roughened and irregular; when caused by omental adhesions, the edges are clear cut and the entire outline of the gallbladder quite distinct.

One of the most important values of the Graham test is in the detection of disturbance of function of the gallbladder. Up to the present time this disturbance has been recognized by four different variations to the normal sequence of the gallbladder shadow as it appears after the administration of the dye; namely, absence of shadow, persistence of shadow, faintness of shadow, and the late appearance of the shadow. It is interesting that in many cases in which gallstones are visualized by the test, the gallbladder still shows fairly good function. The presence of gallstones is such a menace to the health of the patient that they should always be removed. The paper was based on observations made in 312 clinical cases examined by the oral method.

DISCUSSION

Dr. E. S. Blaine, Chicago: My experience with the capsules was at first far from satisfactory. Therefore, I undertook to follow Dr. Graham's technic of intravenous administration. I now find the method about 100 per cent satisfactory from a diagnostic standpoint. Graham himself has said that there is a certain amount of danger in the oral administration. The method is reliable; it is not attended with the dangers that some have reported; when properly interpreted it gives a large percentage of correct conclusions, and several intravenous injections a day are being given in many offices.

Dr. Robert A. Arens, Chicago: I am an ardent advocate of Ariel George, who originated the so-called direct visualization of the gallbladder. The direct method takes its premises on the fact that the normal gallbladder does not show on the film. In order to avoid mistaking gas in the duodenum for a negative shadow, I take a plate in the gallbladder position after the patient has had an opaque meal. This gives the relation of the duodenum and various structures in the upper half of the abdomen. It is surprising to find not only the jejunum but also the ileum in the upper right quadrant producing so-called negative shadows. I should like to ask Dr. Stewart what his experience has been in visualizing the gallbladder in normal persons by his method. Has he made a comparative study of the gallbladder as visualized on the film without a cholecystogram and those that have been shown with the cholecystogram? How do they compare on the basis of showing pathologic changes?

Dr. William H. Stewart, New York: It is not my purpose to state that the oral method is better than the intravenous. Of course, Dr. Blaine, located in a hospital with ample assistance, secured excellent results by the intravenous method; but the office man desires a simple method which does not require so much help. I do not agree with Dr. Arens at all. The gallbladders that are visualized are not all pathologic. I could show a number of cases in which the shadow outlined in the old days as a possible gallbladder wa not the gallbladder.

Surgery of Gallbladder Disease

DR. W. J. MAYO, Rochester, Minn.: The investigation of function by means of dyes has extended from the time when Abel and Rowntree studied renal function up to the investigation by Graham and Cole of the excretion of dyes which were opaque to the roentgen ray. There are types of cholecystitis in which the method is not applicable because the ingress and egress of bile is unhampered. There are other cases in which the patient is so ill that cholecystographic examination cannot be made. The roentgen ray is not infallible. In these cases clinical manifestations must be given due weight. Sometimes the cholecystographic findings and the appearance of the gallbladder at operation do not support the clinical diagnosis. In these cases "cholesterosis" or papilloma showing no evidence of disease in the unopened gallbladder may justify cholecystectomy. Concerning the relative merits of different methods of operating on the gallbladder, in the Mayo Clinic cholecystectomy is performed in more than 90 per cent of cases as against cholecystostomy in less than 10 per cent. After cholecystostomy the gallbladder becomes fixed in adhesions, and the absence of symptoms is no indication that it is functioning.

In cases of acute cholecystitis, when the gallbladder is very large, distended and edematous, with localized peritonitis from complete blockage at the cystic duct, we have had the best results from direct dissection of the cystic duct at the common duct, early closure of the cystic duct with a pair of forceps, and removal of the entire gallbladder, which is easily enucleated with its contained stones and septic material. In acute cases of this kind it sometimes happens that the gallbladder is reduced in size by even gentle manipulation before one can block the cystic duct effectually at the common duct, which leads to the suspicion that some septic material has been allowed to pass into the common duct. In this event, I leave e forceps on the stump of the duct after the removal of the allbladder, or tie the stump at the common duct with a anny knot of catgut, leaving the ends of the ligature long, ging outside the body, so that if there should be symptoms retention in the common duct and failure of good drainage bile through the normal channel, the threads can be pulled or the forceps can be unclamped, allowing the stump of the cystic duct to open and permit free discharge of bile to the surface.

Perforation of the gallbladder into the transverse colon or duodenum is not infrequent, and most of the larger gallstones probably escape in this way rather than through the common duct. I wish to emphasize the importance of the latent period following the period of acute attacks. Permanent cure has followed only when the disease was so early that microscopic examination was necessary to determine its presence. When there are stones in the common duct and jaundice has been present, excision of the gallbladder should be avoided if possible. Statistics have shown that half the deaths following such operations have been due to hemorrhage. When, as a result of obstruction in the head of the pancreas, the gallbladder is distended with bile, the most suitable operation is cholecystogastrostomy or cholecystoduodenostomy. Accidents in performing cholecystectomy are often due to insufficient care in locating and isolating the cystic duct and the cystic artery. I have found McArthur's method of incision helpful in the prevention of postoperative hernia. The question of drainage has long been vexing, but a little drain is a comfort to the surgeon and sometimes a life buoy for the patient. In fleshy patients, it is wise to bring the drains out through a stab wound well to the right so that the main incision can be completely closed. Hernia through the original incision can thus be readily avoided.

DISCUSSION

DR. ALLEN B. KANAVEL, Chicago: There are two groups of these cases: (1) the group in which there is no gross pathologic condition that is recognized as gallbladder disease per se, and (2) the group in which on opening the gallbladder there is very little evidence of pathologic change although there has been definite clinical evidence of perversion of function. The surgeons, the internists and the roentgenologists must clarify the picture of early gallbladder disease.

DR. A. E. HALSTEAD, Chicago: The question of whether to do a cholecystectomy or cholecystostomy is not settled. Moynihan says that cholecystectomy has a mortality equal to that of cholecystostomy. Cholecystectomy has a higher mortality in Chicago than cholecystostomy. In acute gangrenous cholecystitis, acute suppurative cholecystitis, and cases of stones in the gallbladder associated with stones in the common duct and jaundice, drainage offers the best chance. When the gallbladder is no longer functioning, cholecystectomy is the operation of choice.

Medical Aspects of Gallbladder Disease

DR. JOSEPH L. MILLER, Chicago: The treatment of gallbladder disease is surgical. The diagnosis, however, is usually made by the internist. The internist is also called on occasionally to diagnose and treat some of the postoperative complications. Severe epigastric pain without fever but associated with a leukocytosis is suggestive of gallbladder disease, as gastric pains or spasm of the colon do not give leukocytosis. When the pain passes either through to the right scapula or around the right lower thorax, gallbladder involvement is suggested. Biliary colic may appear any hour, day or night. A duodenal ulcer is very frequently troublesome in the early morning hours. Pain after jolting, as long automobile or bus trips, suggests a biliary or renal origin and speaks against spastic colitis or peptic ulcer. The frequency of the attacks and their relation to meals is important. Palpation to determine localized tenderness made especially immediately after the acute pain subsides may supply valuable evidence. The degree of resistance and tenderness on the two sides should be compared. Definite localized tenderness beneath the right costal arch in the parasternal line is suggestive, not conclusive, evidence of gallbladder involvement. During the last two years I have observed a few cases in which the pain was referred to the midsternal region radiating laterally over the chest. It is not like an anginal pain and does not radiate down the arm. There may be complete absence of localized hepatic tenderness. The diagnostic difficulties are much less in that type of gallbladder disease characterized by severe paroxysms of pain than it is in the milder types without severe pain. Here gastric symptoms often predominate, with at most moderate recurrent increased discomfort, difficult to distinguish from the digestive pains. The gastric disturbance may be an indefinite heaviness with belching after meals, or distress may occur from half an hour to one hour after meals, thus resembling peptic ulcer. The pain rarely appears on an empty stomach, as is frequently noted in duodenal ulcer. The medical treatment of gallbladder disease is of interest chiefly from an historical standpoint. The nature of the pathologic changes in the diseased gallbladder holds forth little hope that increasing the flow of bile would be of much value.

DISCUSSION

DR. CHARLES LOUIS MIX, Chicago: In the early manifestations of gallbladder disease, if one pays attention to the little things one will arrive at results well worth having. Individuals with beginning gallbladder disease are usually very fat, complaining of a good deal of disturbance with the stomach, and as a rule about the age of 40. They also complain of pain in the right side radiating in the phrenic nerve distribution. Another important symptom, which is not always present, is vomiting. In ulcer of the stomach, as soon as the contents of the stomach are out the vomiting ceases. In gallbladder disease, after vomiting food the patient continues to vomit bile. A patient with an infected gallbladder is going to have some signs of that infection. The absence of constipation in gallbladder disease and its presence in ulcer are symptoms of importance. The early case of biliary tract infection is a case for the internist, not for the surgeon.

DR. FRANK SMITHIES, Chicago: As MacCarty of the Mayo Clinic has shown, there are very few instances of pure gallbladder disease. Practically all gallbladder disease begins first as liver disease. It would be a good thing to follow Dr. Mix's nomenclature and speak of the condition as biliary tract disease. As to treatment, in the right type of case nonsurgical drainage has a place therapeutically as well as diagnostically.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are reqnested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

30: 753-904 (Dec.) 1925

Conditioned Reflexes and Children's Neuroses. N. I. Krasnogorski, Leningrad, Russia.—p. 753.
*Dried Human Milk. IV. Food for Infants. P. W. Emerson, Boston.—p. 769.
*Comparative Sugar Content of Blood and Cerebrospinal Fluid in Various Conditions. A. Levinson, Chicago.—p. 774.
*Experimental Studies on Rickets. III. Protein Substances as Factor in Normal Osteogenesis and in Healing of Rickets. A. de Bosányi, Baltimore.—p. 780.
*Intrathoracic Tumors in Children. H. L. Dwyer and F. C. Helwig, Kansas City, Kan.—p. 799.
*Basophilic Aggregation in New-Born. A. Friedlander and C. Wiedemer, Cincinnati.—p. 804.
*Blood Platelet Counts in Infants and Young Children. S. McLean and J. P. Caffey, New York.—p. 810.
*Carbohydrate Metabolism of Marantic Infant. F. F. Tisdall, T. G. H. Drake and A. Brown, Toronto.—p. 829.
*Carbohydrate Metabolism of Infants with Diarrhea, Infections and Acute Intestinal Intoxication. F. F. Tisdall, T. G. H. Drake and A. Brown, Toronto.—p. 837.
*Colloidal Benzoin Reaction in Acute Poliomyelitis. J. C. Regan, Brooklyn.—p. 844.
Development and Size of Heart in Children, Revealed by Teleroentgen Ray Measurements. T. Ziskin, Minneapolis.—p. 851.
Postvaccinal Purpura: Case. A. B. Schwartz, Milwaukee.—p. 856.

Dried Human Milk as Infant Food.—Human milk, in dried form, with an average age of 100 days, has been acceptable to a small group of babies as a food. Dried human milk has been fed to this group over an average time of thirty-four days. A small number of poorly nourished babies, fed on dried human milk fortified with sugar, gained rapidly in weight only after the addition of protein. Emerson says that after being taken off dried human milk, the babies gained well on a cow's milk formula. This may have been due to the increased amount of protein.

Sugar Content of Blood and Cerebrospinal Fluid in Various Diseases.—In a series of nonmeningitic fluids examined by Levinson, the cerebrospinal fluid sugar varied between 46 and 76 mg. per hundred cubic centimeters of fluid. The lowest figure (46 mg.) was obtained in a case of brain abscess, with a turbid fluid containing many leukocytes. The next lowest figure was 50 mg. per hundred cubic centimeters. The cerebrospinal fluid sugar bore no direct relation to the blood sugar. The cerebrospinal fluid sugar in all forms of meningitis was low, varying from 45 mg. to a mere trace. In one case of meningococcus meningitis the sugar was unusually high a few hours after onset, but came down to 25 mg. in less than twenty-four hours. The blood sugar in the cases of meningitis varied between 84 and 176 mg. per hundred cubic centimeters. The sugar in the cerebrospinal fluid in a case of encephalitis showed an insignificant rise one hour after injection of glucose, and a rise of 8 mg. three hours after the injection of glucose. Another time, it showed a rise of 11 mg. in two and one-half hours. There was a rise of from 4 to 7 mg. in the cerebrospinal fluid sugar in a case of tuberculous meningitis one hour after the injection of glucose. In one case, there was a marked rise in the cerebrospinal fluid sugar two and one-half hours after injection (34 mg.). In another case, the cerebrospinal fluid sugar was practically at the preinjection level. The same variation was true three hours after the injection of glucose.

Protein Substances Possess Osteogenic Power.—According to Bosányi, certain proteins, presumably histones, with a high content of arginine, play an important rôle in the process of normal ossification. These substances are produced in the bone marrow. The primary event in the healing of the rickety process in the bone is its calcification due to local alteration in the rickety tissue. The changes in the chemical constitution of the blood serum, especially as regards the inorganic phosphorus, though they follow calcification of the bone very rapidly, are of a secondary nature and are sequelae of the calcification.

Intrathoracic Tumors in Children.—Dwyer and Helwig report a case of sarcoma in a child, aged 12, arising from the inner aspect of a rib and filling the right thoracic cavity, producing atelectasis of the right lung and displacement of the heart and mediastinal structures.

Basophils of New-Born.—Friedlander and Wiedemer state that the number of basophilic cells in the blood of the new-born vary between 15,000 and 18,000 per cubic millimeter, and decrease uniformly until by the tenth day the normal for adult blood has been reached.

Blood Platelet Count in Infants and Children.—Four hundred platelet counts were made by McLean and Caffey in 352 different infants and young children. The platelet counts in normal infants and children fluctuate between approximate limits of from 200,000 to 550,000, with a general average of 349,000. The number of platelets in the new-born and in premature infants is fixed within narrower limits and has lower averages, 278,000 and 246,000, respectively. The platelet count in early life approximates the normal count in adults. A reduction in the number of platelets occurred in only three of fourteen patients with severe anemia. Removal of the spleen caused a slight increase in the platelet count. The platelet count was definitely reduced in three cases of lymphatic leukemia. In 173 cases of acute infection occurring in infancy and early childhood, there was no significant alteration in the number of platelets. In the pathologic conditions studied in this group of cases, estimation of the blood platelets was of no valuable diagnostic aid, except in cases of acute lymphatic leukemia.

Carbohydrate Metabolism of Marantic Infant.—There is no evidence from a review of the literature and from the work done by Tisdall, Drake and Brown that the marantic infant is not able to digest and absorb carbohydrate as readily as the normal infant. When feeding the marantic infant, it should be remembered that on the basis of the mass of active protoplasmic tissue, 70 calories per pound daily for the marantic infant is the exact equivalent of 45 calories per pound daily for the normal infant.

Carbohydrate Metabolism of Infants with Intestinal Disturbances.—The results given by Tisdall et al. would indicate that in infants with diarrhea, infection or acute intestinal intoxication, there is a derangement of the carbohydrate metabolism not primarily associated with a deficient production of insulin. Glucose injected into the blood stream of infants with diarrhea, infection or acute intestinal intoxication is not removed as rapidly as in the normal infant.

Colloidal Benzoin Reaction in Poliomyelitis.—A study of the spinal fluid in acute poliomyelitis was made by Regan with the colloidal benzoin reaction. In all, fifty fluids from twenty-three patients were examined at intervals varying from the fourth to the sixtieth day of the disease. A reaction was obtained in every spinal fluid, except one, examined during the first three weeks of the disease. The reaction was almost constantly present in the first three weeks of the disease. From the fourth week on, a negative test occurred with increasing frequency, and most fluids examined after the sixth week were normal. There was no relation between the height of the cell count and the extent of the precipitation of colloidal benzoin. There was a rough but definite relation between the quantity of albumin and globulin in the spinal fluid and the extent of the precipitation of colloidal benzoin.

American Journal of Ophthalmology, Chicago

8: 929-992 (Dec.) 1925

Ocular Protection for Laboratory Workers. J. M. Patton, Omaha.—p. 929.
Eyedness and Handedness. L. Mills, Los Angeles.—p. 933.
Sarcoma of Caruncle. J. G. Dorsey and W. G. Gillett, Wichita, Kan.—p. 942.
Pupillometer. C. E. Feree and G. Rrand, Bryn Mawr, Pa.—p. 945.
Etiology and Pathology of Phlyctenular Keratoconjunctivitis. A. I Aland, Ogden, Utah.—p. 948.
Unilateral Proptosis Due to Scurvy. Brooklyn.—p. 955.

American Journal of Public Health, Albany, N. Y.

15: 1041-1140 (Dec.) 1925

An Association with a Future. H. F. Vaughan, Detroit.—p. 1041.
Cost of Public Health Work. A. W. Freeman, Baltimore.—p. 1046.
Future Development in Industrial Hygiene. D. C. Parmenter, Boston.—p. 1050.
Sanitary Control of Beverages. H. J. Knapp and E. B. Buchanan, Cleveland.—p. 1053.
Self-Purification of Oysters During Hibernation. S. DeM. Gage and F. P. Forham, Providence, R. I.—p. 1057.
Mental Hygiene: Its Relation to Public Health. C. P. Emerson, New York.—p. 1062.
Laboratory Aspects of Oyster Pollution. L. M. Wachter, Albany.—p. 1066.
Place of Sanitary Engineering in Public Health Activities. G. W. Fuller, New York.—p. 1069.
Advancements in Public Health Nursing. A. E. Dines, New York.—p. 1073.
Mediums Used in Shipping Specimens for Isolation of Typhoid Bacilli. E. M. Wade, W. I. Kelly and M. E. Giblin, Minneapolis.—p. 1075.
Registration the Foundation of Vital Statistics. W. H. Davis, Washington, D. C.—p. 1078.
Should Health Examination Be a Screening or Diagnosis? M. E. Champion, Boston.—p. 1083.
Brief Review of Vital Statistics. E. Sydenstricker, Washington, D. C.—p. 1086.

Annals of Clinical Medicine, Baltimore

4: 285-364 (Oct.) 1925

Human Organism as Energy System. W. A. White, Washington, D. C.—p. 285.
What Special Training Should General Practitioner Have to Conduct Satisfactorily Annual Physical Examination? M. E. Higgins, Washington, D. C.—p. 293.
Calcium Deficiency in Asthma, Hay-Fever and Allied Conditions. G. T. Brown and O. B. Hunter, Washington, D. C.—p. 299.
Bismuth in Therapy of Syphilis. O. L. Mulot, Brooklyn.—p. 307.
Pulmonary Exercise in Treatment of Tuberculosis. M. J. Breuter, Lincoln, Neb.—p. 314.
Streptococcic Infection. B. M. Randolph, Washington, D. C.—p. 321.
Present Status of Control of Scarlet Fever. R. O. Clock, Pearl River, N. Y.—p. 327.
*Treatment of Erysipelas with Mercurochrome-220 Soluble. W. W. Eldridge, Washington, D. C.—p. 333.
*Acute Pulmonary Abscess Following Tonsillectomy Treated with Artificial Pneumothorax. W. D. Tewksbury, Washington, D. C.—p. 347.
Sterility in Male: Surgical Treatment. F. R. Hagner, Washington, D. C.—p. 350.

Calcium Deficiency in Asthma and Hay-Fever.—In a series of 166 consecutive patients on whom calcium determinations were made by Brown and Hunter, 39 per cent had a definite calcium deficiency, 24 per cent were low normal and 37 per cent were normal. There were 100 patients with asthma. Of these, 42 per cent had a definite calcium deficiency, 23 per cent were low normal and 35 per cent were normal. There were forty-three patients with perennial hay-fever or hyperesthetic rhinitis. Of these, 37 per cent had a definite calcium deficiency, 21 per cent were low normal and 42 per cent were normal. There were thirty-two cases of typical seasonal or pollen hay-fever. Of these, 28 per cent had a definite calcium deficiency, 34 per cent were low normal and 38 per cent were normal. There were fifteen cases of eczema. Forty per cent of these were calcium deficient, 20 per cent were low normal and 40 per cent were normal. All patients with any degree of calcium deficiency were advised to eat plenty of the foods that are rich in lime and to get as much sunshine as possible. The foods that are particularly rich in calcium are eggs (yolk chiefly), fresh milk, cheese, whole wheat or bran bread, oranges and other fresh fruits, carrots, cabbage and other green leafy vegetables, oatmeal, dried beans, prunes, almonds, walnuts and peanuts. Patients with a low normal calcium were all given calcium lactate, from 3 to 10 grains (0.2 to 0.65 Gm.) three or four times a day, and parathyroid, from 1/20 to 1/10 grain (3 to 6 mg.) from two to four times daily, or thyroid, from 1/10 to 1/2 grain (6 to 30 mg.) from one to three times a day or both, by mouth. Patients with a definite calcium deficiency also received quartz lamp treatments. Gratifying results were obtained in 54 per cent of the calcium deficient cases; definite improvement in an additional 43 per cent, and in only 3 per cent of the cases was the treatment a failure.

Treatment of Erysipelas with Mercurochrome.—In the cases reported by Eldridge, a 5 per cent solution of mercurochrome-220 soluble was applied to the affected area with cotton swabs, once daily, until the eruption was well on its way toward subsidence. In only one case did the affected area show any tendency to spread after the first application of the drug, and in this there was no spreading after the second application. Two patients developed a secondary area of eruption on another part of the body on the third or fourth day after the initial eruption, but the secondary eruption, being treated immediately after appearance, subsided almost at once. The initial eruption in all the cases was seen and treated in the first twenty-four hours after its appearance. The treatment of three cases by cold compresses was undertaken for comparative purposes. It is interesting to note that two of these patients developed serious complications, one of them dying, and that all three showed a tendency for the eruption to spread freely. On the other hand, only one of the eight cases treated with mercurochrome developed any complication, and this one not serious.

Pneumothorax Treatment of Acute Pulmonary Abscess.—The results obtained by Tewksbury in thirty-five cases has convinced him that pneumothorax treatment properly used is the most successful method of treating acute pulmonary abscess. It is accompanied by no shock and by little pain, and gives quick results, complete absorption of the abscess taking place within a few weeks.

Archives of Neurology and Psychiatry, Chicago

14: 731-856 (Dec.) 1925

*Tay-Sachs Disease. C. Schaffer, Budapest, Hungary.—p. 731.
*Breech Delivery in Relation to Injury of Spinal Cord; Infantile Paraplegia. F. R. Ford, Baltimore.—p. 742.
*Recording Muscular Tremors. C. G. Beall, Fort Wayne, Ind.—p. 751.
*Tonic Neck Reflexes; Tuberculous Meningitis. I. S. Wechsler and S. Brock, New York.—p. 758.
Behavior Disorders in Children. I. Psychologic Examination. B. I. Beverly, Chicago.—p. 769.
Id. II. Medical Aspects. H. M. Adler, Chicago.—p. 778.
Id. III. Psychanalytic Studies. D. M. Levy, Chicago.—p. 786.
Vibratory Sensation. R. S. Ahrens, Minneapolis.—p. 793.
*Lumbar Puncture Headache. B. J. Alpers, Philadelphia.—p. 806.
Spina Bifida Occulta Cervicalis; Case. G. B. Hassin, Chicago.—p. 813.
*Basal Metabolism in Mental Disease. K. M. Bowman and C. C. Fry, Boston.—p. 819.

Tay-Sachs Disease.—Schaffer points out that the systemic heredofamilial nervous diseases from the histopathologic standpoint are marked by three features: germ layer selectivity, system selectivity and segment selectivity. These three fixed factors form a factor triad, and they attest an embryologically determined substratum. They are genotypic or idiotypic diseases, and so they can be explained only by the laws of embryology. In general, they are ectodermogenous diseases rather than ectodermotropic diseases. The term ectodermogenia means genotypia; ectodermotropia is synonymous with paratypia. As an example: Take as a phenotype, first, the spastic paralysis of Strümpell or hereditary spastic paralysis, and, second, the syphilitic spinal paralysis of Erb; the first corresponds to idiotypic familial diseases, the second to paratypic nonfamilial diseases. For the first the factor triad is in evidence; in the second there is an exogenous factor (syphilis) which affects a systemic group (lateral tracts), and in this way imitates true familial spastic paralysis. Schaffer has tabulated some of the most important heredofamilial nervous diseases in relation to the factor triad.

Breech Delivery Causes Spinal Cord Lesions.—Six cases of spinal cord lesions resulting from traction during breech extraction are described by Ford, and one necropsy is reported. Five cases showed complete interruption of conduction in the cord. The lesion was high in the thoracic segments in the surviving patients, and in the fatal case the cervical enlargement was involved. Complete paralysis of the lower intercostals, spinal, abdominal and all leg muscles regularly resulted. The bladder discharged urine automatically, but there was always constipation. Sensory loss was usually demonstrable up to the midthoracic segments. Spinal reflexes below the level of the lesion varied in different cases, but on the average were greater than in adults. Complete "mass reflex" was observed in two cases. Five showed the flexion reflex and active tendon reflexes. In five cases the muscles of the legs were slightly flaccid on passive movement, but no atrophy could be demonstrated. Trophic and vasomotor changes were remarkably inconspicuous. No clinical or roentgen-ray evidence of injury to the spinal column was found. One necropsy showed no dislocation or fracture. Five of the cases reported were seen within two years, and it seems that such cases are more frequent than is generally believed. In all cases delivery was difficult, and in two cases it is certain that excessive force was employed in extraction.

Recording Muscular Tremors.—Beall describes a vibration recorder by means of which muscle tremors can be recorded without the interference of a mechanical agency between the movements themselves and the graph. The operation of the instrument is somewhat similar to that of an ordinary camera. It can therefore be operated by any physician without previous experience with or special knowledge of this type of instrument. The resulting record is termed a tremograph

Tonic Neck Reflexes in Tuberculous Meningitis.—The fact that tonic neck reflexes occur frequently in tuberculous meningitis, according to Wechsler and Brock, is noteworthy, although not necessarily specifically diagnostic. That they have been observed in children with hydrocephalus and amaurotic family idiocy is of interest, but not from a diagnostic point of view. Much more extended clinical observations and pathologic correlations are necessary before definite conclusions can be drawn.

Lumbar Puncture Headache.—Alpers asserts that patients who show a marked fall in spinal fluid pressure after lumbar puncture are prone to develop lumbar puncture headache. Pituitary extract (1 cc. intramuscularly) is of great benefit in most cases of lumbar puncture headache. Hypotonic saline solution (100 cc. of a 0.5 per cent solution) is of value in severe and persistent cases of postpuncture headache.

Basal Metabolism in Mental Disease.—The basal metabolism of 161 cases of mental disease was studied by Bowman and Fry. In twenty-four cases of schizophrenia (dementia praecox), seven showed abnormally low readings Eighteen of twenty-four cases showed minus readings. The manic depressive group showed a tendency toward low readings in the depressive and hypomanic stages, but this tendency was not as pronounced as in the schizophrenic cases. The cases of psychosis with epilepsy and epilepsy without psychosis were mostly within normal limits, but there was a tendency toward minus readings rather than plus readings The cases of psychosis with mental deficiency and mental deficiency without psychosis were mostly within normal limits, but there was a definite tendency toward plus readings. Nineteen cases of psychopathic personality were studied. Seven of these showed abnormally low readings and two abnormally high readings Fifteen of the nineteen cases showed minus readings. It would therefore appear that in three important conditions in which the emotional life of the individual is primarily involved, namely, schizophrenia, manic depressive psychosis and psychopathic personality, there is a definite tendency toward a low basal metabolism, and that very few cases show an increased basal metabolism.

Canadian Medical Association Journal, Montreal

15: 1191-1288 (Dec) 1925

Contacts with Nature in Medical Practice H M Speechly —p 1191
Appreciation of Anatomic Relationships J. C B. Grant —p 1195
*Value of Roentgen Rays in Obstetrics R Mitchell and M R. MacCharles —p. 1202
Classification of Postoperative Pulmonary Lesions N B Gwyn —p 1205
Evaluation of Surgical Risks from Standpoint of General Practitioner. F H McMechan —p 1209
Physiotherapy F W Harvey —p 1218.
Osteomyelitis Treatment, Use of Bipp A. P. MacKinson —p 1222.
Fractures S B MacMillan —p 1226
Acute Suppurative Appendicitis W. A Lincoln.—p 1229
Recent Advances in Surgery W. O Stevenson —p 1232
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Bronchial Asthma, Twenty Eight Cases E. H Chant —p 1240
Mal de Siam (Yellow Fever) J J. Heagerty.—p. 1243
Importance of Dental Surgeon in Medicine and Value of Radiography in Dental Practice B R Mooney —p 1245
Fracture of Skull in Child, Treated by Repeated Puncture of Cisterna Magna H M Elder —p 1248
*Case of Larva Migrans J. K Pomeroy —p 1249
Carcinoma of Thyroid with Metastases F. W. Luney —p 1249

Value of Roentgen Ray in Teaching Obstetrics.—Mitchell and MacCharles have found that, in the teaching of obstetrics, well chosen and clear plates will serve to illustrate didactic lectures. The position and attitude of the fetus in utero can be shown vividly, and the roentgen-ray film of a hydrocephalic head once seen will never be forgotten. Knowledge presented through the medium of the eye is readily apprehended

Larva Migrans.—Pomeroy relates the case of a woman who consulted him regarding a rash on the abdomen. She stated that she had a habit of lying prone when weeding the garden. There was a wheal starting near the umbilicus on the right side and ending about 8 inches farther to the right after describing circles. The apparent site of entrance was of a dull inflammatory color; the other end had a bright inflammatory color. It was neither painful nor tender. The probable diagnosis was that it was a case of larva migrans. The skin was frozen with ethyl chloride, which apparently killed the larvae, because Pomeroy's attempt to obtain them was not successful

Chicago Society of Medical History Bulletin, Chicago

3: 339 500 (Sept) 1925

Beginnings of Medical Education in and Near Chicago G H. Weaver, Chicago —p 339.
Elihu Hubbard Smith: Physician, Editor, "Connecticut Wit" H Thoms, New Haven, Conn —p 471.
Liharzik: His Law of Human Growth A. Levinson, Chicago —p 479.
James Stewart Jewell H. N. Moyer, Chicago —p 488
Removal of Foreign Bodies from Respiratory Tract. S A Friedberg, Chicago —p 495

Journal of Biological Chemistry, Baltimore

66: 1 342 (Nov.) 1925

*Influence of Pregnancy on Lipoids of Blood M. Tyler and F. P. Underhill, New Haven, Conn —p 1
Technic for Studying Vitamin B. A H. Smith, G R. Cowgill and H M Croll, New Haven, Conn —p 15
Solubility of Tertiary Calcium Phosphate in Cerebrospinal Fluid. L E. Holt, Jr, Baltimore —p 23
Determination of Cystine by Means of Feeding Experiments. H. C. Sherman and E Woods, New York —p 29
Immunologic Properties of Alcohol Soluble Vegetable Proteins IV. Biologic Reactions of Vegetable Proteins J. H Lewis and H. G Wells, Chicago —p 37
*Effect of Fermentation with Specific Micro Organisms on Vitamin C Content of Orange and Tomato Juice S Lepkovsky, E B Hart, E G Hastings and W C Frazier, Madison, Wis —p 49
Role of Cystine and Certain Mineral Elements in Nutrition. E. Woods, New York —p 57
Condensation Products of Acetoacetic Ester II Oxidation and Possible Relationship to Antiketogenesis in Animal Body. E. S West, St. Louis.—p 63
Body Fluids of Honey Bee Larva II. Chemical Constituents of Blood, Their Osmotic Effects G. H Bishop, A. P. Briggs and E Ronzoni, St Louis —p 77
*Effect of Changes in Circulation on Carbohydrate Utilization F A. Cajori, C. Y Crouter and R Pemberton, Philadelphia —p 89
Soft Pork Studies I Formation of Fat in Pig on Ration Moderately Low in Fat N R Ellis and O G Hankins, Washington, D. C —p 101.
Properties and Composition of Oocytin II G W Clark and P. W. Sharp, Berkeley, Calif —p 123
Parathyroid Hormone (Second Paper) J B Collip and E P. Clark, Edmonton, Alberta.—p 133
Influence of ι Hydroxystearic Ethyl Ester on Acidosis. R. West and E. M Benedict, New York —p. 139
Antirachitic Value of Irradiated Cholesterol and Phytosterol IV. Factors Influencing Biologic Activity A F Hess, M Weinstock and E Sherman, New York.—p 145
*Clinical Calorimetry. XXXIX Exercise and Respiratory Quotient in Diabetes H B Richardson and S Z Levine, New York —p. 161.
*Effect of Thyroparathyroidectomy in Dogs on Excretion of Calcium, Phosphorus and Magnesium I Greenwald and J Gross, New York. —p 185
Excretion of Calcium, Phosphorus and Magnesium After Injection of Calcium Chloride, Sodium Phosphate or Both I. Greenwald and J Gross, New York —p 201
Effect of Administration of Potent Parathyroid Extract on Excretion of Nitrogen, Phosphorus, Calcium and Magnesium; Solubility of Calcium Phosphate in Serum, Pathogenesis of Tetany. I Greenwald and J. Gross, New York —p. 217.
Mineral Metabolism of Lymph Following Injections of Levo and Dextro Suprarenin, Pituitrin and Pilocarpine W. F. Petersen and T. P. Hughes, Chicago —p 229
*Concentration of Chlorides in Glomerular Urine of Frogs. J. T. Wearn and A. N Richards, Philadelphia —p 247.
Quantitative Estimation of Minute Amounts of Urea. J T. Wearn and A N Richards, Philadelphia —p 275
Carbohydrate Utilization I. Rate of Disappearance of *d* Glucose from Blood V. du Vigneaud and W. G Karr, Philadelphia —p 281.
pK' of Henderson Hasselbalch Equation for Hydrion Concentration of Serum G E Cullen, H. R Keeler and H. W. Robinson, Philadelphia —p 301

tolerance of arthritis, it has been shown that by interfering with the blood supply to large muscle masses through elevation of the legs and one arm, an exaggerated and prolonged perglycemia can be induced in some subjects. These facts interpreted as indicating that the rate at which sugar ves the blood after glucose ingestion can be influenced by he character of blood supply to tissues active in sugar oval. Purely mechanical factors should be taken into consideration in interpreting the nature of a low sugar tolerance.

Exercise and Respiratory Quotient in Diabetes.—Richardson and Levine found that the respiratory quotient of the exercising diabetic patient is depressed below the basal level. Reasons are given for the belief that this depression is evidence of a decrease in the proportion of carbohydrate undergoing metabolism. From a review of the available evidence, the conclusion is drawn that fat can be oxidized in the mammalian organism without preliminary conversion into carbohydrate.

Effect of Parathyroidectomy on Calcium Excretion.—It is the belief of Greenwald and Gross that the parathyroid hormone is the substance that keeps calcium phosphate in solution, or, at least, that it is necessary to the preparation of this hypothetic substance. Their experiments, however, seem to indicate that the substance does not merely retard the precipitation of calcium phosphate but actually dissolves it; whether by combination with calcium phosphate, or both, it is impossible, at present, to determine. Experiment animals received practically no calcium in their food. Yet the calcium content of the blood was increased. This must have been at the expense of certain tissues. Since the increased excretion of calcium was regularly accompanied by an approximately equivalent increase in the excretion of phosphorus, it is not unreasonable to assume that both calcium and phosphorus were derived from bone, particularly since there seems to be no other tissue that could supply the large amounts lost. The authors believe that removal of the parathyroids leads to a prompt shortage of this hypothetic substance. Consequently, calcium phosphate is precipitated. There is a prompt decrease in the excretion of phosphate. The concentration of phosphate in the plasma is kept at its normal level or even above that by the phosphate derived from the metabolism of proteins, phosphatides, etc., but the calcium content must fall unless calcium salts are administered. Large amounts of these are necessary because much of the calcium is precipitated as soon as it is absorbed.

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Philippine Islands Medical Association Journal,

5: *319-352* (Nov.) 1925

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South Carolina Medical Association Journal, Greenville

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Southwestern Medicine, Phoenix, Ariz.

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Diagnosis of Cancer. J. H. Musser, New Orleans.—p. 461.
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Uterus Gravidus in Pendulous Belly. R. A. Hernandez, Tucson.—p. 482.
—*p. 482.*

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

37: 503-562 (Dec.) 1925

Roentgenotherapy in Diseases of Skin. H. Fox.—p. 503.
*Relationship of Syphilis to Other Dermatoses. E. F. Skinner.—p. 507.

Relation of Syphilis to Other Dermatoses.—Skinner urges that all cases of lupus erythematosus, erythema nodosum, Raynaud's disease, chilblains, lichen planus and varicose ulcers of the leg should be suspected until the possibility of syphilitic etiology has been excluded. Though the percentage of such cases may not be very great, it is yet sufficiently high to suggest that many of the common dermatoses may be fathered by different causes, which lends support to the view that possibly all or nearly all skin diseases are merely pattern reactions set in motion by certain combinations of circumstances.

British Medical Journal, London

2: 1161-1206 (Dec. 19) 1925

Hyperpiesia. Dawson.—p. 1161.
Id. II. Physiologic Factors in Hyperpiesia. E. H. Starling.—p. 1163.
Id. III. Features of Hyperpiesic Crisis. H. B. Shaw.—p. 1165.
Id. IV. Mortality in Relation to Hyperpiesia. O. May.—p. 1166.
Id. V. Geoffrey Evans.—p. 1167.
Id. VI. Electric Treatment of Hyperpiesia. F. H. Humphris.—p. 1168.
Respiration in Anesthesia: Control by Carbon Dioxide. Y. Henderson.—p. 1170.
Hemorrhage in Association with Pregnancy, Labor and Puerperium. J. W. Bride.—p. 1176.
Nonsyphilitic Argyll Robertson Pupil. W. S. Inman.—p. 1179.
*Cyesedema: Peculiar Bloating of Pregnancy. A. A. Lendon.—p. 1179.

Cyesedema.—Lendon has seen this accompaniment of pregnancy very pronounced in six of 363 consecutive cases since he first observed the condition in 1901. It is a peculiar bloating or swelling, which is quite distinct, on the one hand, from anasarca or ordinary pitting dropsy, and, on the other hand, from the solid swellings, such as myxedema, which it certainly more nearly resembles. It affects the whole body, but attracts more attention in the face, as it so greatly alters the features of a young woman as almost to make her unrecognizable toward the end of pregnancy. It has occurred only in primiparas. It disappears with considerable rapidity after the labor is over. It has not recurred in subsequent labors. Though not specially associated with postmaturity, according to the maternal reckoning, the babies have been large. In two cases there was some albuminuria but no other recognized indication of the so-called toxemia of pregnancy.

China Medical Journal, Shanghai

34: 975-1066 (Nov.) 1925

*Incidence of Human Intestinal Protozoan Infections in Seoul, Korea. J. F. Kessel.—p. 975.
Ethmoidectomy, or Exenteration of Ethmoid Labyrinth. F. E. Dilley.—p. 989.
*Subcutaneous Lesions in Intracutaneous Test for Virulence of Diphtheria. C. E. Lim.—p. 996.
*Extensive Tuberculosis of Eye in Infant. T. M. Li.—p. 1002.
Review of One Hundred Necropsies on Shanghai Chinese. F. Oppenheim.—p. 1011.
*Simple Blood Coagulometer. R. A. Peterson.—p. 1026.
Rat-Bite Fever: Case. C. M. Galt.—p. 1029.
Physical Growth Among Chinese Females and Males of Chekiang. S. M. Shirokogoroff.—p. 1029.
Fuel Value of Chinese Foods. W. H. Adolph and Wei-Hsin Hsu.—p. 1041.
Influence of Chinese Diet on Disease. J. W. H. Chun.—p. 1046.
Problems of Infant Feeding in Orient. C. D. Leach.—p. 1049.

Intestinal Protozoan Infections in Korea.—Infection with *Endameba dysenteriae* shows an incidence of 41 per cent among the Koreans examined by Kessel in the Seoul survey, which is 8.5 per cent higher than among the Chinese examined in the Peking survey. Foreigners examined in Seoul show a 25 per cent incidence of infection with *E. dysenteriae*, which is the same as the incidence among foreign adults in Peking.. This incidence is more than twice as high as that recorded in Great Britain and in the United States. Nine foreigners having sprue symptoms, given an average of five examinations each, showed an incidence of 66.66 per cent infection with *E. dysenteriae*. *Trichomonas hominis* was found to be much more prevalent in the Korean survey, which was carried on during the summer, than in Peking, where the examinations were made for the most part during the winter. *Giardia* was present in 18 per cent of the Koreans examined, an incidence similar to that recorded by Dobell for Great Britain, and Boeck and Stiles for America. This is, however, higher than found in Chinese and foreigners in China, and higher than found in foreigners in Seoul.

Intracutaneous Test for Diphtheria Virulence.—The intracutaneous test for determining the virulence of *B. diphtheriae* Lim found gives satisfactory results. Throat culture showing presence of suspicious diphtheria organisms is injected intracutaneously without previous isolation in pure culture. To experienced observers, the superficial lesions produced in the intracutaneous test are sufficiently diagnostic; to the inexperienced, the subcutaneous lesions are of value.

Extensive Tuberculosis of Eye in Infant.—The case of ocular tuberculosis reported by Li is interesting, first, because the patient was only 10 months of age, and, secondly, because the eye was extensively involved within one month from the time the parents first noticed the inflammation and swelling of the eye to the time of the enucleation. The choroid and the retina were practically transformed into necrotic tuberculous tissue with numerous tubercles. Within these tubercles, acid-fast bacilli are found. Although no typical tuberculous nodules or acid fast bacilli were found in the iris, ciliary muscle, filtration angle, the cornea and the greater part of the sclera, the optic nerve and its sheaths, yet these structures were densely infiltrated with large mononuclear leukocytes or endothelioid cells. The involvement of the eye was evidently secondary to a pulmonary tuberculosis, which finally developed into an acute tuberculous bronchopneumonia.

Simple Blood Coagulometer.—The apparatus used by Peterson consists of a wide mouthed bottle fitted with a perforated rubber stopper, two platinum wires mounted on metal or glass rods, and a thermometer. The rubber stopper has three perforations, two for mounting the rods and one for the thermometer. The rods should fit firmly but not too tightly. There should be four 3 mm. loops in each platinum wire. The bottle is half filled with water at 100 F. The rods are drawn up so that the lower platinum loops clear the water when the rubber stopper is in place. The blood is obtained by a quick stab with a sharp cataract knife, in preference to the usual needle or stylet. The platinum loops are filled in rapid succession and the stopper immediately placed in position. At the expiration of three minutes from the time of filling the loops, the handle of one of the rods is passed into the bottle far enough to allow the first loop to be submerged completely. If no fibrin has formed, the blood will "lake," leaving the loop clean. At half minute intervals, the rod is pushed down and the next loop submerged. This procedure is continued until one of the loops remains completely occluded by fibrin, indicating that the coagulation process is complete.

Edinburgh Medical Journal

32: 781-876 (Dec.) 1925

*Streptococci Found in Pyorrhea Alveolaris. M. J. Thomson.—p. 781.
Fibrositis. R. G. Gordon.—p. 807.
Mental Invalids. III. Classification of Mental Diseases. C. C. Easterbrook.—p. 817.

Streptococci in Pyorrhea Alveolaris.—Pure growths of hemolytic streptococci were obtained by Thomson in all cases of pyorrhea alveolaris. In no case was the pneumococcus demonstrated by culture or animal inoculation. With one exception, the streptococci isolated from individual cases were of one type (Holman's classification). Three types were encountered: *S. mitis*; *S. fecalis*, and *S. salivarius*. The virulence of the streptococci was studied experimentally in animals. Arthritic changes were entirely absent in all cases (with one exception, in which the streptococcus was a hemolytic type, derived from a case of osteomyelitis). Endocarditis could be produced by the injection of streptococci alone, and in most cases it was *S. salivarius* that produced this lesion. Definite kidney lesions, mainly of an interstitial type, occurred.

Carbon and Nitrogen Transformations in Decomposition of Cellulose by Filamentous Fungi. H. Heukelekian and S. A. Waksman, New Brunswick, N. J.—p. 323.

Influence of Pregnancy on Blood Lipoids.—The total ether extract of whole blood in pregnant women, according to Tyler and Underhill, is higher than the nonpregnant values as early as the third month of pregnancy, and there is an increase from then till term. The average value for the total ether extract in eleven cases at term is, roughly, 50 per cent higher than the nonpregnant values, and 30 per cent higher than the value at three months.

Effect of Fermentation on Vitamin C.—Attempts to determine the cause for the disappearance of vitamin C from fermented corn (silage) and fermented cabbage (sauerkraut) have been made by Lepkovsky et al. The action of several organisms occurring in silage has been studied, but it has not been shown that they destroy vitamin C. For this study a technic involving the use of petrolatum for exclusion of air from the fermenting mixture has been developed. With this technic, the destructive action of oxygen on vitamin C can be excluded. While not all the organisms occurring in silage have been included in these studies, it is very probable that the destruction of vitamin C in masses of fermenting plant tissue is to be referred to the oxygen still retained in the mass.

Effect of Circulation Changes on Carbohydrate Utilization.—Some of the factors concerned in determining the rate of sugar removal and hence the shape of the blood sugar curve following alimentary administration of glucose are discussed by Cajori and his associates. In a study of the low sugar tolerance of arthritis, it has been shown that by interfering with the blood supply to large muscle masses through elevation of the legs and one arm, an exaggerated and prolonged hyperglycemia can be induced in some subjects. These facts are interpreted as indicating that the rate at which sugar leaves the blood after glucose ingestion can be influenced by the character of blood supply to tissues active in sugar removal. Purely mechanical factors should be taken into consideration in interpreting the nature of a low sugar tolerance.

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Chloride Concentration in Glomerular Urine.—The nephelometric method of T. W. Richards for the estimating of minute amounts of chlorine has been applied by Wearn and Richards to the study of the chloride concentration of the glomerular urine, collected from frogs in thirteen experiments under various conditions. Comparison of the chloride concentrations of glomerular and bladder urines simultaneously eliminated confirms the qualitative evidence previously advanced in proof of glomerular elimination and tubular resorption of chloride. The figures show that chloride is absorbed at a faster rate than water, even when plasma chloride is more than double its normal value as a result of injection of sodium chloride. In ten of thirteen experiments the plasma chloride concentration also was determined. In all but one of these, glomerular chloride was higher than plasma chloride. In seven instances, the difference amounted to more than 15 per cent of the latter; in four, to more than 28 per cent. Conceding the possibility of errors of technic amounting to 10 per cent, the authors conclude that the filtration theory, as at present defined, is not adequate to explain their results. If subsequent work shall confirm these, it is clear that the processes concerned in glomerular filtration require further study.

Medical Journal and Record, New York

72: 713-780 (Dec. 16) 1925

Proteins and Human Metabolism. W. H. Porter, New York.—p. 713.
Puerperal Sepsis in Wales. Sir E. Maclean, Cardiff, Wales.—p. 719.
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Medical Treatment of Goiter. F. M. Barnes, El Paso, Texas.—p. 478.
Inherited Syphilis. R. A. Hernandez, Tucson.—p. 480.
Uterus Gravidus in Pendulous Belly. R. A. Hernandez, Tucson.—p. 483. —p. 482.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

37: 503-562 (Dec.) 1925

Roentgenotherapy in Diseases of Skin. H. Fox.—p. 503.
*Relationship of Syphilis to Other Dermatoses. E. F. Skinner.—p. 507.

Relation of Syphilis to Other Dermatoses.—Skinner urges that all cases of lupus erythematosus, erythema nodosum, Raynaud's disease, chilblains, lichen planus and varicose ulcers of the leg should be suspected until the possibility of syphilitic etiology has been excluded. Though the percentage of such cases may not be very great, it is yet sufficiently high to suggest that many of the common dermatoses may be fathered by different causes, which lends support to the view that possibly all or nearly all skin diseases are merely pattern reactions set in motion by certain combinations of circumstances.

British Medical Journal, London

2: 1161-1206 (Dec. 19) 1925

Hyperpiesia. Dawson.—p. 1161.
Id. II. Physiologic Factors in Hyperpiesia. E. H. Starling.—p. 1163.
Id. III. Features of Hyperpiesic Crisis. H. B. Shaw.—p. 1165.
Id. IV. Mortality in Relation to Hyperpiesia. O. May.—p. 1166.
Id. V. Geoffrey Evans.—p. 1167.
Id. VI. Electric Treatment of Hyperpiesia. F. H. Humphris.—p. 1168.
Respiration in Anesthesia: Control by Carbon Dioxide. Y. Henderson.—p. 1170.
Hemorrhage in Association with Pregnancy, Labor and Puerperium. J. W. Bride.—p. 1176.
Nonsyphilitic Argyll Robertson Pupil. W. S. Inman.—p. 1179.
*Cyesedema: Peculiar Bloating of Pregnancy. A. A. Lendon.—p. 1179.

Cyesedema.—Lendon has seen this accompaniment of pregnancy very pronounced in six of 363 consecutive cases since he first observed the condition in 1901. It is a peculiar bloating or swelling, which is quite distinct, on the one hand, from anasarca or ordinary pitting dropsy, and, on the other hand, from the solid swellings, such as myxedema, which it certainly more nearly resembles. It affects the whole body, but attracts more attention in the face, as it so greatly alters the features of a young woman as almost to make her unrecognizable toward the end of pregnancy. It has occurred only in primiparas. It disappears with considerable rapidity after the labor is over. It has not recurred in subsequent labors. Though not specially associated with postmaturity, according to the maternal reckoning, the babies have been large. In two cases there was some albuminuria but no other recognized indication of the so-called toxemia of pregnancy.

China Medical Journal, Shanghai

34: 975-1066 (Nov.) 1925

*Incidence of Human Intestinal Protozoan Infections in Seoul, Korea. J. F. Kessel.—p. 975.
Ethmoidectomy, or Exenteration of Ethmoid Labyrinth. F. E. Dilley.—p. 989.
*Subcutaneous Lesions in Intracutaneous Test for Virulence of Diphtheria. C. E. Lim.—p. 996.
*Extensive Tuberculosis of Eye in Infant. T. M. Li.—p. 1002.
Review of One Hundred Necropsies on Shanghai Chinese. F. Oppenheim.—p. 1011.
*Simple Blood Coagulometer. R. A. Peterson.—p. 1026.
Rat-Bite Fever: Case. C. M. Galt.—p. 1029.
Physical Growth Among Chinese Females and Males of Chekiang. S. M. Shirokogoroff.—p. 1029.
Fuel Value of Chinese Foods. W. H. Adolph and Wei-Hsin Hsu.—p. 1041.
Influence of Chinese Diet on Disease. J. W. H. Chun.—p. 1046.
Problems of Infant Feeding in Orient. C. D. Leach.—p. 1049.

Intestinal Protozoan Infections in Korea.—Infection with *Endameba dysenteriae* shows an incidence of 41 per cent among the Koreans examined by Kessel in the Seoul survey, which is 8.5 per cent higher than among the Chinese examined in the Peking survey. Foreigners examined in Seoul show a 25 per cent incidence of infection with *E. dysenteriae*, which is the same as the incidence among foreign adults in Peking.. This incidence is more than twice as high as that recorded in Great Britain and in the United States. Nine foreigners having sprue symptoms, given an average of five examinations each, showed an incidence of 66.66 per cent infection with *E. dysenteriae*. *Trichomonas hominis* was found to be much more prevalent in the Korean survey, which was carried on during the summer, than in Peking, where the examinations were made for the most part during the winter. *Giardia* was present in 18 per cent of the Koreans examined, an incidence similar to that recorded by Dobell for Great Britain, and Boeck and Stiles for America. This is, however, higher than found in Chinese and foreigners in China, and higher than found in foreigners in Seoul.

Intracutaneous Test for Diphtheria Virulence.—The intracutaneous test for determining the virulence of *B. diphtheriae* Lim found gives satisfactory results. Throat culture showing presence of suspicious diphtheria organisms is injected intracutaneously without previous isolation in pure culture. To experienced observers, the superficial lesions produced in the intracutaneous test are sufficiently diagnostic; to the inexperienced, the subcutaneous lesions are of value.

Extensive Tuberculosis of Eye in Infant.—The case of ocular tuberculosis reported by Li is interesting, first, because the patient was only 10 months of age, and, secondly, because the eye was extensively involved within one month from the time the parents first noticed the inflammation and swelling of the eye to the time of the enucleation. The choroid and the retina were practically transformed into necrotic tuberculous tissue with numerous tubercles. Within these tubercles, acid-fast bacilli are found. Although no typical tuberculous nodules or acid fast bacilli were found in the iris, ciliary muscle, filtration angle, the cornea and the greater part of the sclera, the optic nerve and its sheaths, yet these structures were densely infiltrated with large mononuclear leukocytes or endothelioid cells. The involvement of the eye was evidently secondary to a pulmonary tuberculosis, which finally developed into an acute tuberculous bronchopneumonia.

Simple Blood Coagulometer.—The apparatus used by Peterson consists of a wide mouthed bottle fitted with a perforated rubber stopper, two platinum wires mounted on metal or glass rods, and a thermometer. The rubber stopper has three perforations, two for mounting the rods and one for the thermometer. The rods should fit firmly but not too tightly. There should be four 3 mm. loops in each platinum wire. The bottle is half filled with water at 100 F. The rods are drawn up so that the lower platinum loops clear the water when the rubber stopper is in place. The blood is obtained by a quick stab with a sharp cataract knife, in preference to the usual needle or stylet. The platinum loops are filled in rapid succession and the stopper immediately placed in position. At the expiration of three minutes from the time of filling the loops, the handle of one of the rods is passed into the bottle far enough to allow the first loop to be submerged completely. If no fibrin has formed, the blood will "lake," leaving the loop clean. At half minute intervals, the rod is pushed down and the next loop submerged. This procedure is continued until one of the loops remains completely occluded by fibrin, indicating that the coagulation process is complete.

Edinburgh Medical Journal

32: 781-876 (Dec.) 1925

*Streptococci Found in Pyorrhea Alveolaris. M. J. Thomson.—p. 781.
Fibrositis. R. G. Gordon.—p. 807.
Mental Invalids. III. Classification of Mental Diseases. C. C. Easterbrook.—p. 817.

Streptococci in Pyorrhea Alveolaris.—Pure growths of hemolytic streptococci were obtained by Thomson in all cases of pyorrhea alveolaris. In no case was the pneumococcus demonstrated by culture or animal inoculation. With one exception, the streptococci isolated from individual cases were of one type (Holman's classification). Three types were encountered: *S. mitis; S. fecalis,* and *S. salivarius.* The virulence of the streptococci was studied experimentally in animals. Arthritic changes were entirely absent in all cases (with one exception, in which the streptococcus was a hemolytic type, derived from a case of osteomyelitis). Endocarditis could be produced by the injection of streptococci alone, and in most cases it was *S. salivarius* that produced this lesion. Definite kidney lesions, mainly of an interstitial type, occurred.

The streptococci could be recovered from the urine over a protracted period after injection, thus demonstrating the action on the kidney during the prolonged process of elimination. The only suppurative lesions that were found occurred in the kidney and in the heart; in all cases these focal infections were due to *S. salivarius*, thus demonstrating its tendency to localize and produce pus, greater than that of *S. fecalis*. Movements of a choreiform type were produced by the injection of streptococci recovered from cases of oral sepsis.

Japan Medical World, Tokyo

5: 341-372 (Dec. 15) 1925

Temporary Field Laboratory at Omiya. R. Takano, M. Katsumata and R. Naito.—p. 341.
Pathologic Studies on Encephalitis Epidemic of 1924 in Japan. T. Uchiyama.—p. 345.
Height of Pulmonary Apex. K. Takada.—p. 348.
Health Organization of League of Nations and Scope of Its Activity. R. Rajchman.—p. 349.

Journal of State Medicine, London

33: 551-600 (Dec.) 1925

Effect of Heliotherapy and Artificial Light Treatment on Mentality of Patients. H. Gauvin and C. A. McCrae.—p. 551.
Human Endamebiasis in Temperate Zones. J. G. Thomson.—p. 563.

Journal of Tropical Medicine and Hygiene, London

28: 413-436 (Dec. 1) 1925

Gongylonema in Northern Italy. H. A. Baylis and J. E. B. Sambon. —p. 413.
Flagellates of Anophelines and Culicines; Description of Crithidial Form in New Host Anopheles Umbrosus from Federated Malay States. J. G. Thomson and A. Robertson.—p. 419.
Treatment of Yaws (Frambesia) with Novarsan. F. Wilson.—p. 424.
Castellani's Fermentation Phenomenon. J. M. Fiallos.—p. 426.
Acquired Immunity to Malarial Inoculation. J. E. Nicole and J. P. Steel.—p. 428.

Medical Journal of Australia, Sydney

2: 597-618 (Nov. 21) 1925

Infant Feeding. H. M. Mayo.—p. 597.
Artificial Infant Feeding. F. N. Le Messurier.—p. 602.
Torsion of Omental Tag. W. R. Groves.—p. 607.
*Death from Anaphylactic Shock. R. A. Money.—p. 607.

2: 619-644 (Nov. 28) 1925

Etiologic Factor as Guide to Treatment in Arthritis, Fibrositis and Allied Conditions. C. B. Blackburn.—p. 619.
Place of Diathermy in Treatment of Sciatica, Fibrositis and Arthritis. J. W. Hoets.—p. 623.
Muscular Movement and Regulation. F. W. Jones.—p. 627.
Complete Transposition of Viscera. Case. B. Maguire.—p. 631.

2: 645-668 (Dec. 5) 1925

Popular Medical Fallacies. A. Stewart.—p. 645.
Dysentery Bacilli as Recovered from Motions of Infants and Young Children. R. Webster and F. E. Williams.—p. 648.

Death from Anaphylactic Shock.—Money's patient died about three minutes after the injection of 20 cc. of antistreptococcal serum, given intramuscularly because of erysipelas of the face which had resisted local treatment.

South African Medical Record, Cape Town

23: 497-520 (Nov. 28) 1925

Natural Cures. C. F. M. Saint.—p. 499.
Anesthesia from Patient's Point of View. R. M. Muir.—p. 503.
*Exophthalmic Goiter. S. E. Kark.—p. 506.

Digitalis in Exophthalmic Goiter.—Kark reports a case of exophthalmic goiter, showing keratitis in both eyes, and in which marked improvement in the patient's condition resulted from massive doses of digitalis. The patient had a very marked tachycardia, felt extremely distressed, and had marked auricular fibrillation. Kark gave 2 drachm (7.5 cc.) doses of tincture of digitalis twice daily. After three days' interval he gave half an ounce (15 cc.) in one dose. But still the patient showed no improvement. After two days' interval he received 6 drachms (22.5 cc.) in a single dose, and lastly 7 drachms (26 cc.) in one dose, two days later again. About five hours after the last dose his pulse became fairly regular, about 90 to the minute, and he felt comfortable and able to sleep. The patient did not feel sick with such a large dose of digitalis.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 1521-1552 (Dec. 4) 1925

Recklinghausen's Disease with Monoplegia. Babonneix et al.—p. 1521.
Diagnosis of Pancreas Insufficiency from the Duodenal Juice. M. Chiray et al.—p. 1524.
*Cholesterol in Pleural Effusion. C. Mainini.—p. 1534.
Anatomic and Clinical Course of Endocarditis. M. Renaud.—p. 1543.
Encephalitis Beginning with Acute Parkinsonism. H. Eschbach.—p. 1548.
*Salicylate Plus Iodin in Rheumatism. S. I. de Jong and Wolff.—p. 1550.

Pleuritic Effusion with Cholesterol and Tuberculosis.—Mainini treated two cases of pleurisy with cholesterol in the effusion. The patients, aged 28 and 37, had a history of pulmonary tuberculosis apparently cured by an artificial pneumothorax. Hypercholesteremia was manifest in both cases. Under an intrapleural injection of iodized glycerin the limpid effusion with cholesterol changed into an acute tuberculous empyema. This was followed by a reduction of cholesterol in the effusion and in the blood. Lavage of the pleural cavity also induced a simultaneous decrease of cholesterol in the effusion and in the blood, in the other patient. Cholesterol can be found in pleurisy only in a very chronic process. The prognosis of this pleurisy is favorable.

Association of Iodine and Salicylate in Treatment of Chronic Rheumatism.—De Jong and Wolff obtained good results from intramuscular injections of iodine, combined with salicylate by the mouth, in treatment of acute attacks in old rheumatism. They use ampules containing 1 Gm. of sodium iodide in 10 cc. of a 25 per cent glucose solution. In one of their ten patients, 6 Gm. of salicylate by mouth for three days failed to relieve, while 4 Gm. supplemented by injection of iodide banished the pains in two days. The same was observed in another case after failure of four months of other treatment. The iodide is injected into a muscle, close to the affected joint. This combined treatment did not display any special influence in acute articular rheumatism.

49: 1553-1575 (Dec. 11) 1925

*Hemolysis and Hemoglobinuria. P. Emile-Weil and R. Stieffel.—p. 1553.
Mitral Disease and Pulmonary Edema. Magniel.—p. 1557.
Asthma and Paroxysmal Arrhythmia. Magniel.—p. 1559.
*Bile Culture Medium in Typhoid. S. I. De Jong and Hauduroy. —p. 1561.
Fatal Trismus After Skull Trauma. Urechia and Mihalescu.—p. 1566.
*Fatal Case of Chickenpox. R. Debré et al.—p. 1568.
Ouabaine in Heart Disease. Clerc and Bascourret.—p. 1572.

Hemolytic Property of Serum and Plasma in Hemoglobinuria.—Emile-Weil and Stieffel's research was made on the plasma and serum of two patients with hemoglobinuria. The hemolytic property appeared to be entirely different in the two fluids. The hemolytic property of the serum seemed to be an induced phenomenon, independent of the hemoglobinemia. The usual tests for paroxysmal hemoglobinuria seem to demonstrate only a special fragility of the blood, characterized by the presence of hemolysins in the serum. The tests are not specific for hemoglobinuria from chilling, which is probably not a morbid entity. The hemolysis process seems to be connected with defective coagulation. The authors classify eight degrees representing the intensity of the hemolysis process.

Blood Cultures in Typhoid.—De Jong and Hauduroy describe the bacteriologic findings in a case of typhoid fever with recovery. The typhoid bacillus was found in the blood culture, made with bile, by the seventh day of the disease. A simultaneous culture on peptone solution showed no typhoid bacilli till the seventeenth day of the disease. The presence of the bacteriophage was demonstrated in the peptone culture on the tenth day of the disease. The case seems to confirm Hauduroy's statement that the bacteriophage plays an active rôle in the recovery from typhoid fever, and that its presence is significant in the prognosis. The early appearance of the typhoid bacillus in the bile culture is not ascribed to a favorable action of the bile on the growth of the bacillus, but to its inhibiting influence on the lytic action of the bacteriophage.

Fatal Chickenpox.—The patient in Debré and his co-workers' case was a previously healthy woman, eight months pregnant. She died in coma twenty hours after the appearance of fulminating chickenpox. Progressive nervous manifestations and fever appeared simultaneously with the intense eruption. There was evidently localization of the malignant varicella infection in the skin and central nervous system, both of ectodermal origin. The diagnosis of pregnancy eclampsia was excluded by the clinical picture, and by inoculation of a guinea-pig.

Comptes Rendus de la Société de Biologie, Paris

93: 1197-1264 (Nov. 20) 1925. Partial Index

Structure and Development of Bone Tissue. E. Retterer.—p. 1199.
*Hyperinsulinism. H. Gougerot and E. Peyre.—p. 1202.
*"Nature of the Bacteriophage." F. d'Herelle.—p. 1206.
*Blood Phosphorus and Fibroma. J. Dalsace and Guillaumin.—p. 1208.
Calcium and Phosphorus Metabolism After Castration. Idem.—p. 1209.
*Has Milk an Antigen Property? G. Joannidès.—p. 1210.
*Bacilli of Ozena. G. Blanc and G. Pangalos.—p. 1211.
*Herpetic Encephalitis in Cats. P. Remlinger and J. Bailly.—p. 1217.
*Meinecke Test for Syphilis. S. Mutermilch and A. Compagnon.—p. 1222.
Action of Radium on Neurovaccine. S. Mutermilch and Ferroux. —p. 1226.
*Action of Pancreas on the Vagus. L. Garrelon et al.—p. 1233.
Mechanism of Anthrax Infection. L. Muller.—p. 1243.

Suprarenal Insufficiency with Excessive or Perverted Functioning of the Pancreas.—Gougerot and Peyre observed four cases with symptoms of spontaneous hyperinsulinism as described by Harris, analogous to that from injection of an extra large dose of insulin in diabetics. Hyperinsulinism, revealed by weakness, hypoglycemia and the favorable influence of sugar, was associated in their patients with signs of suprarenal insufficiency. In one instance the morbid condition was familial. Three of the patients were syphilitics. Thus a systematic examination for dysinsulinism should be made in cases with suprarenal insufficiency, and for suprarenal insufficiency in those with disease of the pancreas. Antisyphilitic treatment and suprarenal extract, as well as a diet rich in sugar are indicated in this associated syndrome.

Bordet and Ciuca's Theory of "Transmissible Bacterial Autolysis."—D'Herelle presents arguments to refute Bordet's recent theory of two potential "lysogenic properties," an active or spontaneous and a passive or induced autolysis, as the explanation of bacteriophagy. Bordet's statement was based on the fact that certain bacterial cultures, contaminated by the bacteriophage, can be purified, while others cannot. D'Herelle does not believe that there is evidence for such a distinction. He experimented with bacterial cultures which, after having been exposed to the bacteriophage, had lost the lytic property owing to overgrowth of bacteria with acquired resistance. The culture, sown on agar, showed two kinds of colonies; those contaminated by the bacteriophage, and those not contaminated, the ultrapure. After serial transplanting (about ten) the number of the ultrapure colonies gradually decreased, and finally all the colonies were contaminated by the bacteriophage. Bordet's explanation of this phenomenon is that an active lysogenic property at first becomes passive, but reacquires the active property on serial transplanting. D'Herelle accepts this phenomenon as confirming the theory of the bacteriophage as a parasitic ultravirus, affecting bacteria. Under successive transplantations the acute infectious parasitic disease becomes chronic, a comparative balance being established between the virulence of the parasite and the resistance of the bacterium. Bordet and Ciuca ascribe serial bacteriophagy to an "inherited nutritional defect" caused in the bacterium under the action of leukocyte products. D'Herelle inoculated fresh bacterial cultures with a filtrate containing the bacteriophage. Bacteriolysis developed. The entirely fluid medium was then filtered to exclude all bacteria, or it was heated to a temperature destroying all the bacteria, without killing the bacteriophage. The filtrate thus contained no bacteria that had been in contact with the bacteriophage, but it induced bacteriolysis when inoculated in other normal cultures. The experiment was repeated indefinitely, and always with the same results. It excludes, D'Herelle asserts, a "hereditary nutritional defect" in the bacteria, since there was no heredity. There were no descendants, so there could be no heredity.

Phosphatemia and Fibroma.—Dalsace and Guillaumin noted an exaggerated amount of phosphorus in the blood of women with a fibroma. This, they think, confirms the theory of a special predisposition, favoring the formation of fibromas. Hyperphosphatemia may be one of the factors creating this predisposition. The phosphorus dropped considerably in three of five women after ovariectomy. A reduction of the blood calcium was manifest also in four after the operation.

Does Milk Induce Production of Anatoxin?—Joannidès injected guinea-pigs with cultures of toxic diphtheria bacilli, in broth or milk. While the animals, injected with the bouillon culture, died in sixteen or nineteen hours, those injected with the milk culture survived. The latter group appeared to be immunized in seven or eight days after the inoculation. The same phenomena were observed with tetanus toxin. Further experiments are now being made to establish whether milk has an actual anatoxin producing property, or is merely bactericidal.

Bacilli Causing Fetidity in Ozena.—Blanc and Pangalos made a great number of bacteriologic examinations in patients with ozena. They conclude that the fetid odor accompanying the disease is due to *Bacterium ozaenae* (Perez' bacillus), and to a bacillus which they call *Bacillus ozogenes.*

Transmission of Herpetic Encephalitis.—Remlinger and Bailly inoculated the brains of twenty-four cats with the virus of herpes. Encephalitis developed in seven; followed by recovery in one. Passages through cats, as well as through rabbits, yielded positive results.

Practical Value of Meinicke Test in Diagnosis of Syphilis.—Mutermilch and Compagnon applied in 300 serums the Meinicke turbidity test and fixation of complement reaction. In 197 serums from normal or nonsyphilitic patients, both tests were always negative. In primary and secondary syphilis both methods harmonized. In tertiary syphilis, the Meinicke test was more sensitive in one; in latent syphilis the fixation reaction was more sensitive in one instance. In congenital syphilis both tests were equally specific. Evidently the Meinicke test may advantageously supplement the fixation reaction. It may be the only method of examination in the hands of physicians who lack a well equipped laboratory.

Action of the Pancreas on Tonus and Excitability of the Vagus.—Garrelon, Santenoise and Le Grand's experiments on dogs suggest that insulin exerts a strong stimulating action on the vagus. Removal of the pancreas is followed by a gradual decrease of the pneumogastric tonus and irritability. Injection of blood from a vagotonic animal into a depancreatized animal induces in the latter the reappearing of the pneumogastric tonus and irritability. The blood from a pancreatectomized donor is without effect on the parasympathetic tonus and excitability in the injected animal. The vagus-stimulating substance, secreted by the pancreas, exists in the blood in an amount sufficient to exert the physiologic action. The action is similar to that of the suprarenals on the sympathetic.

Paris Médical

57: 493-508 (Dec. 12) 1925

*Treatment of Spastic Constipation. R. Goiffon.—p. 493.
Classification of Cases of Acute Bronchitis. G. Rosenthal.—p. 496.
Heart Insufficiency with Emphysema. Rouslacroix and Perrimond. —p. 499.
Bone Lesions in Neurofibromatosis. A. Puech.—p. 502.
*Bismuth in Kidney Insufficiency. A. Yarotzky.—p. 506.

Atropinized Charcoal in Treatment of Spastic Constipation.—Goiffon's treatment is based on Wiechowski's experiments showing that substances absorbed by charcoal are released in the colon, thus acting directly on the colon mucosa. He uses a preparation containing 0.0005 Gm. of atropine per teaspoonful of animal charcoal. The preparation was given to seven patients with spastic constipation. Three teaspoonfuls a day were taken at first; later one, and then one or two teaspoonfuls a week. The results, he says, were remarkable. The atropin was well tolerated; it caused a profuse diarrhea, without colic.

Bismuth Carbonate in Renal Insufficiency.—Yarotzky's idea is to combat insufficient functioning of the kidneys by inducing the elimination of sodium chloride and urea by the digestive tract. Up to 50 Gm. of the bismuth carbonate, given daily, may remove a large amount of the chloride from the organism, as bismuth carbonate in contact with the hydrochloric acid of the stomach forms an oxychloride, insoluble in water. Thus the elimination of sodium chloride in the stools is insured. Stimulation of hydrochloric acid secretion increases the chloride excretion; this may be obtained by giving the bismuth carbonate in milk. No substance is known yet which will form with urea an insoluble compound in the digestive tract.

57: 509-532 (Dec. 19) 1925

Medical Electricity in 1925. E. and H. Biancani.—p. 509.
Gymnastics in Physical Training. P. Carnot.—p. 520.
*Diathermy in Aerophagy. H. Bordier.—p. 524.
*Electrotherapy of Exophthalmic Goiter. Delherm and Laquerrière. —p. 526.
*Ultraviolet Rays in Treatment of Anemia. L. Tixier.—p. 529.

Diathermy in Treatment of Aerophagy.—Bordier advocates the use of diathermy in aerophagy from dyspepsia or nervous disorder. Under this local treatment the stomach evacuates its contents more promptly, owing to the stimulation of the motor function, and the gastric pain disappears. Three cases are reported in which a few exposures were followed by recovery. Electric currents of 3,800 or 4,000 milliamperes were used for thirty or forty minutes, in each exposure. The larger electrode was applied to the dorsolumbar region, the smaller to the epigastrium and left hypochondrium. The exposures were repeated every day or three times a week.

Electrotherapy of Exophthalmic Goiter. — Delherm and Laquerrière associate roentgen rays with galvanofaradic currents in treatment of exophthalmic goiter. The negative disk is put on the thyroid, the positive, back of the neck. A current of from 10 to 20 milliamperes is used in a twenty minute sitting. (Laborderie obtained good results from salicylate iontophoresis at the negative electrode.) Series of three daily exposures are repeated after a certain interval. Under the treatment the general condition markedly improved; the action on the local phenomena was less manifest. In eleven of fifteen patients thus treated, the metabolism was reduced, becoming almost normal; in the others the general condition and metabolism remained unchanged.

Ultraviolet Rays in Treatment of Anemias.—Tixier emphasizes that the ultraviolet rays are without action in pernicious anemia. They are effectual in secondary anemias of medium intensity. The influence is manifest not only on the blood, but also on functional signs. Anemia in children, from rickets, syphilis, malnutrition, hemorrhages or in convalescence, may benefit from the rays. Anemia from tuberculosis does not yield to this treatment.

Presse Médicale, Paris

33: 1617-1632 (Dec. 9) 1925

Cancer of Tonsil and Tongue. P. Jacques.—p. 1617.
Nonfebrile Malarial Paroxysms. P. Schrumpf-Pierron and A. Pagnier. —p. 1618.
*Treatment of Mercury Poisoning. A. Landau et al.—p. 1619.
*Roentgenotherapy of Spinal Tumors. H. Schaeffer.—p. 1620.

Bismuth in Treatment of Mercury Poisoning.—Landau, Marjanko and Fergin consider bismuth treatment as specific in mercury poisoning. It brought about recovery in 80 per cent of twelve cases. They describe a grave case of mercuric chloride poisoning with complete recovery, notwithstanding the anuria which had persisted for seven days. Bismuth subnitrate and bismuth carbonate, 0.75 Gm. of each, were given four or six times a day. The usual methods are used to supplement the bismuth treatment. The diet is limited first to sweetened tea and orange juice; then to food poor in albumin. The treatment is based on the theory that the incoercible vomiting, bloody diarrhea and intolerable pains are secondary phenomena from infected ulcerations in the digestive tract. Bismuth aims to combat the infection lesions; the healing of the kidney lesion may occur spontaneously, even in advanced cases.

Roentgen Ray in Treatment of Spinal Tumors.—Schaeffer believes that surgical intervention is indicated in benign juxtaspinal tumors, while malignant tumors of the spinal cord and meninges require the roentgen rays. In certain cases an operation should be associated with roentgen-ray therapy.

33: 1665-1680 (Dec. 19) 1925

*Insulin in Suprarenal Insufficiency. G. Marañon.—p. 1665.
*Acute Occlusion of the Pylorus. X. Delore et al.—p. 1667.
Epigastric Pains in Diagnosis. R. A. Gutmann.—p. 1669.
Intraspinal Anesthesia in Intestinal Obstruction. Lefebvre.—p. 1671.

Insulin in Suprarenal Insufficiency. — Marañon injected 5 and 10 units of insulin in two women with Addison's disease. A dose of 10 units was also given to a woman with cancer of the stomach, and to another with advanced tuberculosis of the lungs. It was evident that insufficiency of the suprarenals had induced a special susceptibility to insulin. Thus small doses of insulin might induce even fatal by-effects in Addison's disease. The hypersensibility is not connected with the general condition, since it was not apparent in two other cachectic patients with hypotension and hypoglycemia. The cause of the hypersensibility seemed to be a decrease of the epinephrine secretion. Grave lesions of the suprarenals were found in diabetics who had died in coma, notwithstanding the disappearance of hyperglycemia and acidosis under insulin. Observation of a man with a tumor of the pituitary showed that insufficiency of this gland does not induce a hypersensibility to insulin comparable to that from suprarenal insufficiency.

Acute Occlusion of Pylorus in Course of Stenosis.—Delore, Rougemont and Creyssel report seven cases. They recall that the first phase of the disease is characterized by moderate, but repeated and intractable vomiting for about a week. This is followed by the second phase—a grave general condition. There are always anatomic changes of the pylorus with stenosis. The condition may be complicated by spasm, of toxic origin. Gradual intoxication from the stagnating gastric contents seems to create the grave condition. Surgical measures should be preceded by medical treatment consisting in intrarectal injections of glucose solution, and use of heart tonics.

33: 1681-1696 (Dec. 23) 1925

Anomalies of Sacral Vertebra—Spondylolisthesis. Léri.—p. 1681.
Syphilitic Epididymitis of Tertiary Stage. Oudard and Jean.—p. 1684.
*Action of Sparteine on the Heart. R. Delas and L. C. Soula.—p. 1685.

Mechanism of the Action of Sparteine.—Delas and Soula conducted their experiments on toads. It showed that sparteine is a poison, which induces contraction of the myocardium. Thus is explained its tonic action on the heart. Sparteine may be effectual in tachycardia and dilatation of the heart.

Schweizerische medizinische Wochenschrift, Basel

55: 1173-1192 (Dec. 24) 1925

*Significance of Fever. R. Isenschmid.—p. 1173.
*Fever. W. Löffler.—p. 1181.
*Fever and Tuberculosis. M. Jaquerod.—p. 1187.

Significance of Fever.—This issue contains reports made at the meeting of the Swiss Biologic Society at Aarau. Isenschmid presents a short and practically complete survey on recent theoretical work.

Pediatria, Naples

33: 1309-1344 (Dec. 15) 1925

*Leishmaniasis in Children. S. Cannata.—p. 1309.
*Anatoxin Prevention of Diphtheria. Ivo Nasso.—p. 1312.
*Hydrocele in Infants. C. Gallo.—p. 1317.
Frequency of Congenital Syphilis at Naples. A. Bocchini.—p. 1326.
Vaccine Prevention of Measles. L. Ricciardi.—p. 1333.
Measles with Tuberculous Complications. Sindoni and Guccione.—p. 1338.

Leishmaniasis in Children.—Cannata reports further good results of treatment of leishmaniasis in children with sodium and antimony tartrate. It acts well even in patients who had not been benefited by potassium and antimony tartrate. He used a 1 per cent solution of the drug in a 0.75 per cent solution of sodium chloride, sterilized in the autoclave. The initial dose was 2 cc. (intravenously). Increasing doses (by 1 cc. in infants, by 2 cc. in children older than 3 years) were injected two or three times a week. The maximum dose was usually 10 cc. except in children who reacted with cough when 8 cc. was reached.

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Hydrocele in Infants.—Gallo found evidence of congenital syphilis in thirteen of twenty infants with hydrocele.

Policlinico, Rome

32: 1783-1820 (Dec. 21) 1925

*Auscultatory Percussion in Fractures. E. Vigevani.—p. 1783.
Treatment of Tuberculosis and "Debility." G. Breccia.—p. 1787.
Treatment of Tetanus. G. Famiglietti.—p. 1791.

32: 585-632 (Dec. 15) 1925. Surgical Section

Retroperitoneal Lipomas. G. Antonioli.—p. 585.
Chronic Abscess of Tongue. G. Baggio.—p. 591.
Acute Tuberculosis of the Testis: Two Cases. U. Bani.—p. 594.
Sarcoma of the Bladder. T. Bottari.—p. 601.
Successful Transplantation of the Testis. N. Leotta.—p. 617.

Auscultatory Percussion in Diagnosis of Fractures.—Vigevani's auscultation with a stethoscope is done while drawing a line under slight pressure with a finger toward the point of suspected fracture.

Rivista di Clinica Pediatrica, Florence

23: 793-864 (Dec. 15) 1925

Grave Jaundice in Child. P. Poletti.—p. 793.

Archivos Latino-Amer. de Pediatría, Buenos Aires

19: 1045-1126 (Sept.) 1925

*The American Child Welfare Institute. L. Morquio.—p. 1045.
Annual Report of Infant Welfare Service of National Public Health Department. C. Ferreira.—p. 1063.
*Epidemic Encephalitis in Child. N. Leone Bloise and O. Beisso.—p. 1086.

The American Child Welfare Institute.—This international institution for all America was mentioned in the News Department, recently.

Epidemic Encephalitis in Child of 3.—This is the youngest child known to have epidemic encephalitis in Uruguay. The disease began with symptoms of a "cold" and the child did not sleep at night, but slept late the next day, and somnolency became almost continuous. Fleeting diplopia and myoclonic spasms confirmed the diagnosis. The symptoms subsided in about a month, and eight months later the child seemed physically normal but a previously noted unruly tendency was much exaggerated. The parents were healthy, with eleven living children. The treatment had been merely with purgation, tepid bathing, and hexamine by mouth and subcutaneously. Iodine, calcium and arsenic were given during convalescence. As the case was relatively benign, no attempt was made to give sodium salicylate by the vein, a practice much in vogue now in Uruguay for cases with pains and the motor symptoms and parkinsonian sequelae of epidemic encephalitis.

Boletin de la Soc. de Obstet. y Ginec., Buenos Aires

4: 377-446 (Oct. 20) 1926

*Placenta Praevia. N. Palacios Costa and P. A. Landa.—p. 378.
*Foreign Body in Bladder. A. Chueco.—p. 420.
Dystocia from Sacral Tumor in Fetus. Bello and Jakob.—p. 426.
Rupture of Uterus at Term; Fetus in Its Membranes Intact in Abdominal Cavity; Prompt Recovery After Suture. Pérez.—p. 432.
Massage in Treatment of Retroflexion. S. E. Bermann.—p. 437.

Placenta Praevia at Buenos Aires.—Palacios Costa and Landa devote thirty-five pages to tabulation under fifty-eight headings of the details of 203 cases of placenta praevia at the women's clinic, 1914 to 1923. These cases formed 1.04 per cent of the total 19,450 pregnant women. Two died of the twenty-one praevia primiparas, and of the eighty-six multiparas, a mortality of 5.4 per cent, omitting the moribund cases. The high death rate of the viable children, 47 per cent, emphasizes the necessity for sending praevia cases to the hospital in time for cesarean section to save the child.

Hairpin in Bladder.—The woman had once extracted with a hairpin a small calculus impacted in the urethra. In a recurring attack of retention, she attempted to repeat the procedure, but the hairpin escaped into the bladder and it became incrusted to form a calculus as large as a hen's egg. It was removed by suprapubic section, which allowed extraction of the part of the hairpin embedded in the bladder wall. This could not have been reached so well by a vaginal operation, and the urine would not have allowed such rapid healing of a low operative wound. Chueco usually prefers a vaginal operation.

Lisboa Médica, Lisbon

2: 405-452 (Sept.) 1925

Radium Treatment in Uterine Cancer. Gentil and B. Guedes.—p. 405.
*Idiopathic Dilatation of the Esophagus. Cascão de Anciães.—p. 415.

Idiopathic Dilatation of the Esophagus.—Cascão de Anciães encountered in less than a year four cases of this kind. In one a sarcoma had developed secondarily Great benefit was realized in one case by dilating exercises with two bougies at a time. The woman was taught to continue these herself, and there is no dysphagia or other symptom now.

Revista Médica Latino-Americana, Buenos Aires

10: 1301-1422 (Sept.) 1925

*Sclerosis of the Pulmonary Artery. F. C. Arrillaga.—p. 1301.
*Artificial Pneumothorax in Pregnancy and Childbirth. A. A. Raimondi and T. González.—p. 1308.
*Torsion Spasm in the Young. A. S. Marotta.—p. 1315.
Anatomy of the Thoracic Duct. J. A. Caeiro.—p. 1367.
*Acetonuria After Operations. C. Cardini and F. Martinez.—p. 1381.

"Black Cardiacs."—Arrillaga gives colored plates and roentgenograms, taken in different positions, besides illustrations of the necropsy findings. In one of the two cases of Ayerza's disease described, there had been no edema, although the polycythemia reached 9,400,000 and the hemoglobin 168 per cent. The right ventricle was enormously dilated, as was also the first part of the pulmonary artery. Signs of mild insufficiency of the heart with even a slight tendency to cyanosis should suggest some lesion in the pulmonary artery, and tentative treatment for syphilis should be started at once. Five cases were in the hospital at one time, recently.

Artificial Pneumothorax in Pregnant Tuberculous Women.—The seven cases reported confirm that conservative measures, promptly applied, may carry the woman safely through a pregnancy, without aggravating the tuberculosis. With unilateral disease, an artificial pneumothorax is advised during the pregnancy, and it is imperative immediately after delivery. Otherwise, the lesions are speeded up by the sudden relaxation of the diaphragm when the pressure from the enlarged uterus is removed. Raimondi and González applied therapeutic pneumothorax in two of the seven cases early in pregnancy; in the others, immediately after delivery.

Deforming Muscular Dystonia.—Marotta has had a case of progressive torsion spasm under observation for five years, and gives fourteen illustrations of the phases of the dystonia. Certain features suggest a new type, which he calls the "spasmodic contorsive" variety. The boy had developed normally to the age of 12, when tremor and jerking movements were noted. The literature on dystonia musculorum deformans in the young is reviewed.

Acetonuria Before and After Operations.—Among the causes, liver lesions take a prominent place. In a woman, aged 35, the signs and symptoms of insufficiency of the liver appeared with a grave syndrome of acidosis. The whole followed close on the development of an acute adnexitis. The fever from the latter subsided the fifth day, although the local tenderness persisted. Two days later the liver symptoms appeared, with acetonuria, somnolency and swelling of the liver, but the sugar content of the blood was normal. No benefit was realized in three days of the usual measures, but immediate improvement followed injection of 5 units of insulin twice a day. This case suggests the wisdom of tentative insulin treatment in all cases of acetonuria.

Revista de la Soc. Arg. de Urol., Buenos Aires

1: 111-138 (Sept.) 1925

*Local Anesthesia for Lithotrity. A. Astraldi and J. A. Quintana.—p. 111.
Diagnosis of Polycystic Kidney. J. Salleras.—p. 114.
*Prostatic Double Adenoma. Ortiz and Gazzolo.—p. 119.
*Degeneration of Kidney with Calculi. R. Spurr.—p. 123.
*Undescended Testis on Opposite Side. R. Spurr.—p. 133.

Local Anesthesia for Lithotrity.—Astraldi and Quintana have had no mortality in their twelve cases in which the vesical calculus was crushed painlessly in the bladder after injection of 50 cc. of a 0.5 per cent solution of procaine, two hours before the operation. The bladder was emptied just before this, the one catheter serving for both. Every half hour the bladder is evacuated anew, and 50 cc. more of the anesthetic solution is injected, to a total of 200 cc. in the increases the chloride excretion; this may be obtained by giving the bismuth carbonate in milk. No substance is known yet which will form with urea an insoluble compound in the digestive tract.

57: 509-532 (Dec. 19) 1925

Medical Electricity in 1925. E. and H. Biancani.—p. 509.
Gymnastics in Physical Training. P. Carnot.—p. 520.
*Diathermy in Aerophagy. H. Bordier.—p. 524.
*Electrotherapy of Exophthalmic Goiter. Delherm and Laquerrière.—p. 526.
*Ultraviolet Rays in Treatment of Anemia. L. Tixier.—p. 529.

Diathermy in Treatment of Aerophagy.—Bordier advocates the use of diathermy in aerophagy from dyspepsia or nervous disorder. Under this local treatment the stomach evacuates its contents more promptly, owing to the stimulation of the motor function, and the gastric pain disappears. Three cases are reported in which a few exposures were followed by recovery. Electric currents of 3,800 or 4,000 milliamperes were used for thirty or forty minutes, in each exposure. The larger electrode was applied to the dorsolumbar region, the smaller to the epigastrium and left hypochondrium. The exposures were repeated every day or three times a week.

Electrotherapy of Exophthalmic Goiter.—Delherm and Laquerrière associate roentgen rays with galvanofaradic currents in treatment of exophthalmic goiter. The negative disk is put on the thyroid, the positive, back of the neck. A current of from 10 to 20 milliamperes is used in a twenty minute sitting. (Laborderie obtained good results from salicylate iontophoresis at the negative electrode.) Series of three daily exposures are repeated after a certain interval. Under the treatment the general condition markedly improved; the action on the local phenomena was less manifest. In eleven of fifteen patients thus treated, the metabolism was reduced, becoming almost normal; in the others the general condition and metabolism remained unchanged.

Ultraviolet Rays in Treatment of Anemias.—Tixier emphasizes that the ultraviolet rays are without action in pernicious anemia. They are effectual in secondary anemias of medium intensity. The influence is manifest not only on the blood, but also on functional signs. Anemia in children, from rickets, syphilis, malnutrition, hemorrhages or in convalescence, may benefit from the rays. Anemia from tuberculosis does not yield to this treatment.

Presse Médicale, Paris

33: 1617-1632 (Dec. 9) 1925

Cancer of Tonsil and Tongue. P. Jacques.—p. 1617.
Nonfebrile Malarial Paroxysms. P. Schrumpf-Pierron and A. Pagnier.—p. 1618.
*Treatment of Mercury Poisoning. A. Landau et al —p. 1619.
*Roentgenotherapy of Spinal Tumors. H. Schaeffer.—p. 1620.

Bismuth in Treatment of Mercury Poisoning.—Landau, Marjanko and Fergin consider bismuth treatment as specific in mercury poisoning. It brought about recovery in 80 per cent of twelve cases. They describe a grave case of mercuric chloride poisoning with complete recovery, notwithstanding the anuria which had persisted for seven days. Bismuth subnitrate and bismuth carbonate, 0.75 Gm. of each, were given four or six times a day. The usual methods are used to supplement the bismuth treatment. The diet is limited first to sweetened tea and orange juice; then to food poor in albumin. The treatment is based on the theory that the incoercible vomiting, bloody diarrhea and intolerable pains are secondary phenomena from infected ulcerations in the digestive tract. Bismuth aims to combat the infection lesions; the healing of the kidney lesion may occur spontaneously, even in advanced cases.

Roentgen Ray in Treatment of Spinal Tumors.—Schaeffer believes that surgical intervention is indicated in benign juxtaspinal tumors, while malignant tumors of the spinal cord and meninges require the roentgen rays. In certain cases an operation should be associated with roentgen-ray therapy.

33: 1665-1680 (Dec. 19) 1925

*Insulin in Suprarenal Insufficiency. G. Marañon.—p. 1665.
*Acute Occlusion of the Pylorus. X. Delore et al.—p. 1667.
Epigastric Pains in Diagnosis. R. A. Gutmann.—p. 1669.
Intraspinal Anesthesia in Intestinal Obstruction. Lefebvre.—p. 1671.

Insulin in Suprarenal Insufficiency.—Marañon injected 5 and 10 units of insulin in two women with Addison's disease. A dose of 10 units was also given to a woman with cancer of the stomach, and to another with advanced tuberculosis of the lungs. It was evident that insufficiency of the suprarenals had induced a special susceptibility to insulin. Thus small doses of insulin might induce even fatal by-effects in Addison's disease. The hypersensibility is not connected with the general condition, since it was not apparent in two other cachectic patients with hypotension and hypoglycemia. The cause of the hypersensibility seemed to be a decrease of the epinephrine secretion. Grave lesions of the suprarenals were found in diabetics who had died in coma, notwithstanding the disappearance of hyperglycemia and acidosis under insulin. Observation of a man with a tumor of the pituitary showed that insufficiency of this gland does not induce a hypersensibility to insulin comparable to that from suprarenal insufficiency.

Acute Occlusion of Pylorus in Course of Stenosis.—Delore, Rougemont and Creyssel report seven cases. They recall that the first phase of the disease is characterized by moderate, but repeated and intractable vomiting for about a week. This is followed by the second phase—a grave general condition. There are always anatomic changes of the pylorus with stenosis. The condition may be complicated by spasm, of toxic origin. Gradual intoxication from the stagnating gastric contents seems to create the grave condition. Surgical measures should be preceded by medical treatment consisting in intrarectal injections of glucose solution, and use of heart tonics.

33: 1681-1696 (Dec. 23) 1925

Anomalies of Sacral Vertebra—Spondylolisthesis. Léri.—p. 1681.
Syphilitic Epididymitis of Tertiary Stage. Oudard and Jean.—p. 1684.
*Action of Sparteine on the Heart. R. Delas and L. C. Soula.—p. 1685.

Mechanism of the Action of Sparteine.—Delas and Soula conducted their experiments on toads. It showed that sparteine is a poison, which induces contraction of the myocardium. Thus is explained its tonic action on the heart. Sparteine may be effectual in tachycardia and dilatation of the heart.

Schweizerische medizinische Wochenschrift, Basel

55: 1173-1192 (Dec. 24) 1925

*Significance of Fever. R. Isenschmid.—p. 1173.
*Fever. W. Löffler.—p. 1181.
*Fever and Tuberculosis. M. Jaquerod.—p. 1187.

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*Leishmaniasis in Children. S. Cannata.—p. 1309.
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although the spleen inhibits the hemopoiesis. Loewy discovered in the blood of animals, subjected to low air pressure, substances which stimulate regeneration of the blood (hemopoetins). Such serums are without any effect in rabbits after extirpation of the thyroid and thymus. In a similar way, injections of sodium nucleinate do not induce leukocytosis in such animals. If splenectomy is added, the reaction reappears, but the animals die—probably because they are unable to stand the losses of blood required in conducting the research, when three of the regulating organs are removed.

Rupture of Apparently Healthy Aorta.—Paschkis reports a case of spontaneous rupture of the aorta in a man aged 46. There was neither syphilis nor atherosclerosis to account for the condition.

The Blood After Burns.—Schreiner and Pucsko confirm the polycythemia with a low color index and leukocytosis after burns.

Calcium Regulation in Pregnancy.—Hetényi and Liebmann observed a lower calcium content in the serum toward the end of pregnancy. The blood from the umbilical vein contains more calcium than the blood from the artery.

21: 1949-1966 (Dec. 24) 1925

*Diseases of the Gallbladder. W. Schöndube and H. Kalk.—p. 1949.
*Cancer Research. G. Domagk.—p. 1953. C'cn.
Symposium on Cancer of the Rectum. Mandl and Schnitzler.—p. 1955.
*Congenital Syphilis in Twins. Cassel.—p. 1957. C'cn.
Induced Hyperemia of the Shoulder. R. Kurzmann.—p. 1958.
*Treatment of Undernourished Tissues. S. Lieben.—p. 1958.
Modification of Venesection. S. Rechnitzer.—p. 1959.
*Blood Groups in Cancer. G. Weitzner.—p. 1960.
Survey on Ophthalmology. Adam.—p. 1962.

Diseases of the Gallbladder.—Schöndube and Kalk diagnose occlusion of the cystic duct if there is little or no change in the bile (aspirated by the duodenal tube) after an injection of pituitary extract. The method checks up on cholecystography. With a patent duct, cholelithiasis may prolong the latency period (for instance, fifty-five minutes instead of twenty), or shorten the time of elimination of dark bile (five minutes instead of fifteen or more). It may also happen that the bile is darker colored than usual, even before the injection, and does not change much afterward. This indicates occlusion of the cystic duct, as it occurs frequently also after cholecystectomy.

Cancer Research.—Domagk reviews the more or less recent research on cancer. He subjected mice to a weak roentgen irradiation before tarring. Almost all these animals reacted to the tarring with cancers, which he induced only in 4-5 per cent of the nonirradiated animals. Intravenous injections of an emulsion of mouse tar cancer caused in rats sarcomas of the liver or lungs.

Congenital Syphilis in Twins.—Cassel observed congenital syphilis in ten pairs of twins. The first symptoms showed in the twins, who were of the same sex, once at the same time; three times at different periods, and once in a manner which could not be definitely classified. The syphilis started at the same time in three out of five pairs of different sex. He believes that a transmission of different amounts of spirochetes by the syphilitic placenta would account best for these observations.

Treatment of Undernourished Tissues.—Lieben obtained a good result in a patient whose extremity was amputated for diabetic gangrene with little tendency for healing: he played a jet of warm oxygen on the wound. Similar results were obtained in torpid ulcers on the legs. The temperature must not be too high. The method gave excellent results in experimental pneumococcus keratitis in rabbits—the other eye serving as control.

Blood Groups in Cancer.—Weitzner determined the blood group in eighty-four patients with carcinomas and in over 1,000 controls. The group percentage in cancer cases was: group I (Jansky) 16.6 per cent; group II 42.9 per cent; group III 14.3 per cent; group IV (AB) 26.2 per cent. His controls were: 35.7 per cent; 43.3 per cent; 15.7 per cent; and 5.3 per cent respectively. He points to the distinctly smaller occurrence of the agglutinogens in cancer. Group IV seems to indicate a predisposition; group I a resistance to cancer.

Münchener medizinische Wochenschrift, Munich

72: 2177-2222 (Dec. 18) 1925

*Salt and Hyperacidity. W. Weitz and W. Kissling.—p. 2177.
*Amino-Acids of Blood. E. Becher and E. Herrmann.—p. 2178.
Homeopathy. W. Richter.—p. 2181.
*The Capillaries in Twins. R. Mayer-List and G. Hübener.—p. 2185.
*Chemical Differentiation of Races. E. O. Manoiloff.—p. 2186.
*Chloroform Inhalation with Failing Fetal Heart. L. Willkomm.—p. 2188.
Training in Public Speaking as Form of Psychotherapy. F. Keller-Reymond.—p. 2190.
A Desk Prop for the Chest. Schede.—p. 2192.
"Urobilin and Liver Cirrhosis." A. Adler.—p. 2192.
*Tuberculous Hip Joint Disease in Children. Magg.—p. 2192.
*Heart Muscle After Carbon Monoxide. Gürich.—p. 2194.
The Spirochetes in Malaria Treated Paresis. E. Forster.—p. 2197.
Fracture of External Malleolus. M. Geldmacher.—p. 2200.

Salt and Hyperacidity.—Weitz and Kissling found that administration of sodium chloride in water or with solid meals causes a lower acidity than the same substances given without salt. Thus, the restriction of salt in treatment of hyperacidity seems to be irrational.

Amino-Acids of Blood.—Becher and Herrmann found with Folin's method 6-6.7 mg. of amino-acid nitrogen per hundred cubic centimeters of blood. The amount is markedly increased in leukemia (over three fold), in certain acute infectious diseases, liver disease, in certain cases of nephritis, and shortly before death. They discuss the differences in regard to free and bound acids—the latter increasing especially in nephritis. They emphasize the parallelism with uric acid.

Microscopy of the Capillaries in Twins.—Mayer-List and Hübener made observations on the capillaries of twenty-seven probably univitelline pairs of twins, and twenty-three bivitelline. The correct diagnosis as to the single or double chorion could be made from this examination alone in twenty-two of the first group of pairs and in twenty of the second.

Chemical Differentiation of Races.—Manoiloff adds to 3 cc. of a 3-5 per cent emulsion of blood cells (obtained from the clot) one drop of a 1 per cent alcoholic solution of methylene blue. After stirring, he adds 5 drops of a 1 per cent alcoholic solution of cresyl violet and stirs again. He adds 3 drops of a 0.5—1 per cent solution of silver nitrate and, after stirring, 1 drop of a 40 per cent solution of hydrochloric acid. After stirring well, he adds 3-5 or more drops of a freshly prepared aqueous 1 per cent solution of potassium permanganate. The amount of the latter depends on the quality of the dyes. He finds that the cresyl violet disappears in the blood taken from Jews, which becomes blue, while the fluid stays bluish red with blood from Russians. He had 187 correct results in 202 tests. He found differences even between the blood of Russians and Ukrainians. The children from mixed marriages (father Russian, mother Jewish, Polish or Armenian) gave a faster reaction than pure Russians. No difference from the Russian was noted in children from intermarriage between Russians and the German or yellow race. Kogan observed with this method that injection of epinephrine induces temporarily the "Russian" reaction in Jewish children. He explains the differences by greater speed of oxidation in Jewish blood as compared with the Russian.

Chloroform Inhalation with Failing Fetal Heart.—Willkomm confirms the good influence of chloroform inhalation on the beginning asphyxia of the fetus. When the fetal heart rate keeps below 100 during two successive intervals between the labor pains, he administers 6-8 drops of chloroform per minute. Its action consists probably in the improvement of the fetal circulation due to a decreased tonus of the uterus or abdominal muscles.

Tuberculous Hip Joint Disease in Children.—Magg emphasizes that limping, with apparently normal intervals, pain in the knee without local findings and pain in dorsal hyperextension of the thigh are most important. All the symptoms may be absent in the free intervals. It is necessary to advise the parents to bring the child again if the limping reappears.

Heart Muscle After Carbon Monoxide.—Gürich examined four cases of fatal poisoning with illuminating gas. The typical heart changes are hemorrhagic necrotic foci with leukocytic infiltrations surrounding them. The septum and especially the papillary muscles of the left ventricle presented the gravest changes. The media of certain arteries of the brain was necrotic and infiltrated with lime.

course of the two hours. Just before the operation, morphine is injected and the urethra anesthetized with a 1 per cent solution of procaine. Pavone has applied local anesthesia for thirty years and in 3,024 lithotrity cases, with a mortality of 1 55 per cent.

Double Adenoma of the Prostate.—Ortíz and Gazzolo warn of the necessity for examining whether there may not be a second recess containing part of the prostate. The bed of the prostate in a case described was partitioned off into two parts, each containing an adenoma. This was not discovered at the prostatectomy—the second adenoma having been overlooked—and the man survived only a few days.

Total Sclerolipomatous Degeneration of the Kidney.—The nephrectomy was done on the diagnosis of cancer, although the absence of hematuria had been puzzling. The entire kidney had been transformed into fat and was easily removed. Maracni has had a similar case, but the patient soon died from myocardiac insufficiency.

Displacement of Testes.—A left inguinoscrotal hernia was evidently partially responsible for pulling the right testis over on the left side. The left testis had been pushed over into the normal place of the right testis, so that the absence of one testis had not been suspected

Deutsche medizinische Wochenschrift, Berlin

51: 2101-2142 (Dec 18) 1925

*The Pupils in Encephalitis A Westphal —p 2101
Hypertension P Fleischmann —p 2104 C'cn
Stomach Movements After Oral Stimuli F Walinski —p 2106
Iodine Idiosyncrasy of the Skin A Buschke and H Ollendorf —p 2109.
*Differential Blood Counts S Moschkowski —p 2110
Acute Endocarditis and Chronic Diseases A Sonnenfeld and A. Mendershausen —p 2113
*Chronic Diphtheria of Nose A Abraham —p 2114
Tuberculosis and Sleeping Sickness in Africa Steudel —p 2116
*"Allergy After Vaccination plus Tuberculin" Moro and Keller —p 2118.
*Blood Sugar in Pernicious Anemia Blumenthal and Neuburger —p 2119
*Immunity to Sperma L Bodnar and H Kamniker —p. 2119
Reduction Titer of Urine W O Moor —p 2120
Organic or Inorganic Iron? R Seyderhelm —p 2120
Pseudotumor of the Humerus Sonntag —p 2123
Vasoligation in Treatment of Hypertrophy of the Prostate J. J Stutzin. —p 2124
Stoppers for Injection Fluids W Korb —p 2125
Occupational Hygiene W Rosenthal —p 2126
The Campaign Against Tuberculosis E Alstaedt —p 2127.
Structure of Bacteria A Moeller —p 2139

The Pupils in Encephalitis.—Westphal described eighteen years ago a transitory rigidity of the pupils in catatonic patients. He has observed the same symptom recently in epidemic encephalitis. It is closely associated with changes of tonus in striated muscles For instance, it could be observed only during a spasm of the orbicular muscles of the eye, with attacks of yawning, or with spasm of the internal rectus muscles of the eyes.

Differential Blood Counts.—Moschkowski pays more attention to the absolute counts of the various blood cells per cubic millimeter than to their simple percental differences.

Chronic Diphtheria of Nose.—Abraham observed thirteen cases of chronic diphtheria of the nose presenting all the symptoms of ozena. The patients recovered after large doses of antitoxin and an autovaccine had been administered.

"Allergy After Vaccination plus Tuberculin."—Moro and Keller emphasize with regard to Fernbach's paper (summarized in these columns, Jan 16, 1926, on page 236), that they had pointed out in their paper the necessity for a control with simple glycerol bouillon. Their results were identical with those of Fernbach.

Blood Sugar in Pernicious Anemia.—Blumenthal and Neuburger found neither regular changes of blood sugar in pernicious anemia nor any connection between the severity of the disease and the level of the blood sugar.

Immunity to Sperma.—Bodnár and Kamniker mixed human sperma with the serum of more than 100 women. There were no definite results. The spermatozoa survived from two to thirteen hours. Only in the serum from three virgins the spermatozoa survived longer than in any one of the controls. They do not draw any definite conclusions from this small number.

Klinische Wochenschrift, Berlin

4: 2425-2480 (Dec 17) 1925

*Surgery of Angina Pectoris. Goldscheider.—p. 2425.
Sanocrysin Treatment. K Faber.—p 2429.
*Significance of Carotin F. Goebel and A. Stern —p 2434.
Hyperacidity and Duodenal Ulcer. K. Tiefensee.—p. 2435.
Microsedimentation Test O. Gragert —p. 2436
Tetanus After Criminal Abortion G. H. Schneider.—p. 2438.
*Registering Apparatus for Gas Metabolism H. Dethloff.—p. 2440.
Comment. Leschke.—p. 2441.
Respiration in Pulmonary Tuberculosis. N. Róth —p. 2442.
Atoxic Thallium Compounds A Buschke and B. Peiser —p 2444.
*Spleen and Methemoglobin E. Frey —p 2445.
*Aqueous Solution of Ovarian Hormone B Zond[illegible] B Brahn —p 2445
*Action of Insulin and Electrolytes J Abelin an[illegible] Goldener.—p. 2446
Necrotic Diphtheria of the Skin. C. Meyer —p. [illegible]
Hypnotics G L Dreyfus —p 2448.
*Cleavage of Carbohydrates A. Gottschalk —p. 2[illegible]
The "Normal" in Medicine. M. Hauptmann —p 2457
Radium and the Blood Pressure. E. Müller.—p [illegible]

Surgery of Angina Pectoris.—Goldscheid[illegible] [illegible]uld restrict surgical intervention in angina pectoris to t[illegible] [illegible]nerate cases He mentions intravenous injections [illegible]romin derivative as a measure to be tried befo[illegible] operative measures. He reports two cases—one [illegible] of fibers of the vagus, and another with sympathectomy. The pains disappeared in the first case permanently, in the other temporarily, but fatal insufficiency of the heart developed shortly after the operation in both.

Significance of Carotin.—Goebel and Stern found no changes of the respiration of blood or tissues in the presence of carotin. It is known that the absence of carotin from the yolk does not inhibit the development of the chicken.

Registering Apparatus for Gas Metabolism Findings.—Dethloff has succeeded in devising an apparatus which registers continually both the oxygen intake and carbon dioxide elimination.

Spleen and Methemoglobin.—Frey found with a simple graphic method a reduction in the size of the spleen when methemoglobinemia is induced by nitrobenzol or other poisons—just as Barcroft observed in carbon monoxide poisoning. Epinephrine and choline cause the same phenomenon; atropine the opposite.

Aqueous Solution of Ovarian Hormone.—Zondek and Brahn describe their method for obtaining water soluble extracts from the placenta or follicular fluid of the ovary. The substance induces estrus in castrated mice. They conclude that the ovarian hormone is only dissolved in lipoids, and that it can be separated from lipoids by their method.

Action of Insulin and Electrolytes.—Abelin and Goldener enhanced the action of insulin in rabbits by simultaneous administration of 2 Gm of monosodium phosphate. Disodium phosphate inhibits its action. Other salts also influence the reaction of the rabbit: for instance, a mixture of sodium chloride, bicarbonate and sulphate is a synergist of insulin.

Cleavage of Carbohydrates.—Gottschalk reviews the newest data on the initial stages of biochemical cleavage of carbohydrates. A labile form of glucose and formation of methylglyoxal are most probable.

Medizinische Klinik, Berlin

21: 1909 1948 (Dec 18) 1925

*Blood and Iron Metabolism L Asher.—p 1909.
Cancer Research G Domagk —p 1911 C'td
Symposium on Syphilis Galewsky and others —p 1914 C'tn.
Congenital Syphilis in Twins Cassel —p 1916 C'td
Emphysema and Pneumothorax in Kyphoscoliosis. T. Vaternahm —p 1919.
*Rupture of Aorta K Paschkis —p 1921.
Fissure of the Anus L. Fischl —p 1922 C'cn
*The Blood After Burns. K Schreiner and O Pucsko —p. 1925. C'cn.
Serum Sickness Freitag —p 1928
Arsphenamine Treatment M Baer —p 1928
*Calcium Regulation in Pregnancy. Hetenyi and Liebmann —p. 1929.
Leukemia in Relation to Trauma Von Schnizer —p 1934.
Roentgen Reduction of Enlarged Glands. H. Holfelder.—p. 1936
Tuberculosis of Male Urogenital Organs H. Wildbolz Supplement. —pp 1-48.

Blood and Iron Metabolism.—Asher points out that splenectomy is followed by increased elimination of iron, which in dogs is normally about 16 mg. per day (15 mg. of it by the feces). Therefore administration of iron or food containing it is necessary to avoid anemia after splenectomy, although the spleen inhibits the hemopoiesis. Loewy discovered in the blood of animals, subjected to low air pressure, substances which stimulate regeneration of the blood (hemopoetins). Such serums are without any effect in rabbits after extirpation of the thyroid and thymus. In a similar way, injections of sodium nucleinate do not induce leukocytosis in such animals. If splenectomy is added, the reaction reappears, but the animals die—probably because they are unable to stand the losses of blood required in conducting the research, when three of the regulating organs are removed.

Rupture of Apparently Healthy Aorta.—Paschkis reports a case of spontaneous rupture of the aorta in a man aged 46. There was neither syphilis nor atherosclerosis to account for the condition.

The Blood After Burns.—Schreiner and Pucsko confirm the polycythemia with a low color index and leukocytosis after burns.

Calcium Regulation in Pregnancy.—Hetényi and Liebmann observed a lower calcium content in the serum toward the end of pregnancy. The blood from the umbilical vein contains more calcium than the blood from the artery.

21: 1949-1966 (Dec. 24) 1925

*Diseases of the Gallbladder. W. Schöndube and H. Kalk.—p. 1949.
*Cancer Research. G. Domagk.—p. 1953. C'cn.
Symposium on Cancer of the Rectum. Mandl and Schnitzler.—p. 1955.
*Congenital Syphilis in Twins. Cassel.—p. 1957. C'cn.
Induced Hyperemia of the Shoulder. R. Kurzmann.—p. 1958.
*Treatment of Undernourished Tissues. S. Lieben.—p. 1958.
Modification of Venesection. S. Rechnitzer.—p. 1959.
*Blood Groups in Cancer. G. Weitzner.—p. 1960.
Survey on Ophthalmology. Adam.—p. 1962.

Diseases of the Gallbladder.—Schöndube and Kalk diagnose occlusion of the cystic duct if there is little or no change in the bile (aspirated by the duodenal tube) after an injection of pituitary extract. The method checks up on cholecystography. With a patent duct, cholelithiasis may prolong the latency period (for instance, fifty-five minutes instead of twenty), or shorten the time of elimination of dark bile (five minutes instead of fifteen or more). It may also happen that the bile is darker colored than usual, even before the injection, and does not change much afterward. This indicates occlusion of the cystic duct, as it occurs frequently also after cholecystectomy.

Cancer Research.—Domagk reviews the more or less recent research on cancer. He subjected mice to a weak roentgen irradiation before tarring. Almost all these animals reacted to the tarring with cancers, which he induced only in 4-5 per cent of the nonirradiated animals. Intravenous injections of an emulsion of mouse tar cancer caused in rats sarcomas of the liver or lungs.

Congenital Syphilis in Twins.—Cassel observed congenital syphilis in ten pairs of twins. The first symptoms showed in the twins, who were of the same sex, once at the same time; three times at different periods, and once in a manner which could not be definitely classified. The syphilis started at the same time in three out of five pairs of different sex. He believes that a transmission of different amounts of spirochetes by the syphilitic placenta would account best for these observations.

Treatment of Undernourished Tissues.—Lieben obtained a good result in a patient whose extremity was amputated for diabetic gangrene with little tendency for healing: he played a jet of warm oxygen on the wound. Similar results were obtained in torpid ulcers on the legs. The temperature must not be too high. The method gave excellent results in experimental pneumococcus keratitis in rabbits—the other eye serving as control.

Blood Groups in Cancer.—Weitzner determined the blood group in eighty-four patients with carcinomas and in over 1,000 controls. The group percentage in cancer cases was: group I (Jansky) 16.6 per cent; group II 42.9 per cent; group III 14.3 per cent; group IV (AB) 26.2 per cent. His controls were: 35.7 per cent; 43.3 per cent; 15.7 per cent; and 5.3 per cent respectively. He points to the distinctly smaller occurrence of the agglutinogens in cancer. Group IV seems to indicate a predisposition; group I a resistance to cancer.

Münchener medizinische Wochenschrift, Munich

72: 2177-2222 (Dec. 18) 1925

*Salt and Hyperacidity. W. Weitz and W. Kissling.—p. 2177.
*Amino-Acids of Blood. E. Becher and E. Herrmann.—p. 2178.
Homeopathy. W. Richter.—p. 2181.
*The Capillaries in Twins. R. Mayer-List and G. Hübener.—p. 2185.
*Chemical Differentiation of Races. E. O. Manoiloff.—p. 2186.
*Chloroform Inhalation with Failing Fetal Heart. L. Willkomm.—p. 2188.
Training in Public Speaking as Form of Psychotherapy. F. Keller-Reymond.—p. 2190.
A Desk Prop for the Chest. Schede.—p. 2192.
"Urobilin and Liver Cirrhosis." A. Adler.—p. 2192.
*Tuberculous Hip Joint Disease in Children. Magg.—p. 2192.
*Heart Muscle After Carbon Monoxide. Gürich.—p. 2194.
The Spirochetes in Malaria Treated Paresis. E. Forster.—p. 2197.
Fracture of External Malleolus. M. Geldmacher.—p. 2200.

Salt and Hyperacidity.—Weitz and Kissling found that administration of sodium chloride in water or with solid meals causes a lower acidity than the same substances given without salt. Thus, the restriction of salt in treatment of hyperacidity seems to be irrational.

Amino-Acids of Blood.—Becher and Herrmann found with Folin's method 6-6.7 mg. of amino-acid nitrogen per hundred cubic centimeters of blood. The amount is markedly increased in leukemia (over three fold), in certain acute infectious diseases, liver disease, in certain cases of nephritis, and shortly before death. They discuss the differences in regard to free and bound acids—the latter increasing especially in nephritis. They emphasize the parallelism with uric acid.

Microscopy of the Capillaries in Twins.—Mayer-List and Hübener made observations on the capillaries of twenty-seven probably univitelline pairs of twins, and twenty-three bivitelline. The correct diagnosis as to the single or double chorion could be made from this examination alone in twenty-two of the first group of pairs and in twenty of the second.

Chemical Differentiation of Races.—Manoiloff adds to 3 cc. of a 3-5 per cent emulsion of blood cells (obtained from the clot) one drop of a 1 per cent alcoholic solution of methylene blue. After stirring, he adds 5 drops of a 1 per cent alcoholic solution of cresyl violet and stirs again. He adds 3 drops of a 0.5—1 per cent solution of silver nitrate and, after stirring, 1 drop of a 40 per cent solution of hydrochloric acid. After stirring well, he adds 3-5 or more drops of a freshly prepared aqueous 1 per cent solution of potassium permanganate. The amount of the latter depends on the quality of the dyes. He finds that the cresyl violet disappears in the blood taken from Jews, which becomes blue, while the fluid stays bluish red with blood from Russians. He had 187 correct results in 202 tests. He found differences even between the blood of Russians and Ukrainians. The children from mixed marriages (father Russian, mother Jewish, Polish or Armenian) gave a faster reaction than pure Russians. No difference from the Russian was noted in children from intermarriage between Russians and the German or yellow race. Kogan observed with this method that injection of epinephrine induces temporarily the "Russian" reaction in Jewish children. He explains the differences by greater speed of oxidation in Jewish blood as compared with the Russian.

Chloroform Inhalation with Failing Fetal Heart.—Willkomm confirms the good influence of chloroform inhalation on the beginning asphyxia of the fetus. When the fetal heart rate keeps below 100 during two successive intervals between the labor pains, he administers 6-8 drops of chloroform per minute. Its action consists probably in the improvement of the fetal circulation due to a decreased tonus of the uterus or abdominal muscles.

Tuberculous Hip Joint Disease in Children.—Magg emphasizes that limping, with apparently normal intervals, pain in the knee without local findings and pain in dorsal hyperextension of the thigh are most important. All the symptoms may be absent in the free intervals. It is necessary to advise the parents to bring the child again if the limping reappears.

Heart Muscle After Carbon Monoxide.—Gürich examined four cases of fatal poisoning with illuminating gas. The typical heart changes are hemorrhagic necrotic foci with leukocytic infiltrations surrounding them. The septum and especially the papillary muscles of the left ventricle presented the gravest changes. The media of certain arteries of the brain was necrotic and infiltrated with lime.

Wiener klinische Wochenschrift, Vienna

38: 1373-1396 (Dec. 24) 1925

Sanocrysin Treatment. C. H. Würtzen.—p. 1373.
*Standardization of Pituitary Preparations. K. Tauber.—p. 1377.
"Ptosis" and "Atony" of the Stomach. E. Schütz.—p. 1378.
Cervical Placenta Dissecans. H. Heidler.—p. 1382.
Peptone Treatment. A. Kirch.—p. 1383.
Compulsory Rat Extermination in Austria. M. Kaiser.—p. 1384.
Birth Trauma of the Skull in the New-Born. H. Heidler. Supplement. —pp. 1-24.

Standardization of Pituitary Preparations.—Tauber suggests to utilize the inhibition of diuresis or the action on the gall-bladder for standardization of extracts from the posterior lobe of the pituitary. It is essential to measure the urine every hour, since the initial inhibition is followed after three hours by an increased diuresis.

Časopis lékařů českých, Prague

64: 1789-1824 (Dec. 12) 1925

*Treatment of Cancer of the Breast. F. Tománek.—p. 1789.
Blackmail and Rape. J. Stuchlík.—p. 1793.
The Erythrocytes in Urodel Amphibians. O. Jírovec.—p. 1801.
Lymphangioma of the Skin. B. Rejsek.—p. 1802.
The Tarnier, Kielland and Demelin Forceps. J. Saidl.—p. 1808. C'cn.
*Funnel Shaped Chest. J. Zahradníček.—p. 1814.

Treatment of Cancer of the Breast.—Tománek never irradiates operable cancers of the breast. He uses radium only for prevention of recurrences after radical operations. He pleads for the French method, repeating the irradiation for several days in order to reach the mitoses. Only one out of ten patients thus treated had a recurrence within two years.

Funnel Shaped Chest.—Zahradníček's patient was a boy 16 years old with a high degree of funnel shaped chest. The sagittal diameter at the point of the depression was about 10 cm. The patient was dyspneic and had palpitations. The operation consisted in perforation of the sternum and introduction of two wires which were used for traction. The [illegible]sult was quite satisfactory.

[illegible]derlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 2379-2482 (Nov. 28) 1925

*Acrocephalosyndactylism. J. de Bruin.—p. 2380.
Endotheliomas. O. H. Dijkstra.—p. 2393.
Structure and Significance of Connective Tissue. VIII. G. C. Heringa and H. A. Lohr.—p. 2399.
*Medical Officials of Railroads, etc. P. M. v. W. Palthe.—p. 2407.
The Nomenclature of Vitamins. E. C. van Leersum.—p. 2418.

Congenital Abnormally Large Skull and Fusion of Fingers and Toes.—De Bruin gives an illustrated description of two personal cases of the set of malformations in head, hands and feet to which Apert called attention in 1906, labeling it acrocephalosyndactylia. There are about thirty-three cases on record, none with familial or hereditary features. The prognosis as to life seems to be favorable but vision is threatened, as in steeple skull. On account of the huge rounded protruding skull above the level of the eyes, the exophthalmos and the deformed hands, the education of these children is generally neglected, but otherwise they seem mentally normal; only two were idiots.

The Work of Railroad Physicians.—This is an address delivered at the semicentennial of the Netherlands Society of Railroad Medical Officials. Palthe emphasizes the importance of the combination of headache, somnolency and partial or total unconsciousness, as something which requires at once expert institutional observation and tests. He describes some typical cases showing the danger of wasting time before discovery of the cause. Detection of malingering is often possible only with expert study of conditions. Factitious seizures in one case were not interpreted correctly for two years, the man receiving workman's compensation, and loafing. In his repeated falls he never injured himself, and there was no tongue biting or incontinence. Palthe insists on the beneficial effect of treating the results of an emotional shock as a trifle, and getting the victim to resume, more or less completely, his ordinary occupation at once. This reduces the tendency to traumatic neuroses: When a rider falls off in the riding school, a good riding master gets him back on the horse and riding again at once, without asking any suggestion-breeding questions as to how much he is hurt, etc. The layman often knows the advantage of this even bette than physicians. To order rest after a nervous shock i often almost the worst thing that can be done. Unfortunatel it is indispensable with grave physical injuries, but th neurotic element should be investigated by experimenta psychologic measures as promptly as possible. He reiterate that such an investigation runs no risk of rousing or aggravating neurotic phenomena, as some seem to fear. Eve when there is organic injury, he advises to have the patien keep at work unless it directly aggravates the injury or i dangerous for others. To condemn a man to idleness is t anchor and perpetuate any neurotic tendency. He urges consultation and cooperation between medical officials in suc cases to provide the patient with partial occupation if he i unable to resume entirely his former task. Productive wor —not merely keeping busy—is such a sovereign remed against disability that no pains should be spared to realiz it. The neurosis once developed, nothing can be accomplishe with the patient idle at home, and very little in the hospital An institution where the neurotic, the partially disabled could do good productive work would save a treasure o work accomplished and enjoyment of life now absolutel wasted. In conclusion he remarks that a traumatic neurosi requires a predisposition as well as a trauma, and that i should be the task of the medical official to detect this predisposition beforehand, and keep the man out of position liable to entail trauma. It is high time, he adds, that th officials of all big business should be guided by the psychi as well as the physical capacity of the employee in assigning him to a position.

Acta Medica Scandinavica, Stockholm

63: 1-194, 1925

Standardization of Hemoglobinometers. H. C. Gram.—p. 1.
Tumor of Gasserian Ganglion. E. Gjertz and S. Hellerström.—p. 7.
The Pallidal Syndrome. F. Leiri.—p. 24.
*Benign Glycosuria and Diabetes. J. E. Holst.—p. 47.
*Circulation in Exophthalmic Goiter. G. Liljestrand and N. Stenström.—p. 99.
*Hemoglobin and the Circulation. Idem.—p. 130.
*The Circulation in Hypertension and Pregnancy. Idem.—p. 142.
Porphyrinuria. E. Melkersson.—p. 153.
Roentgen Study of the Bronchi. Möller and R. von Magnus.—p. 174.
Postural Reflexes. F. Leiri.—p. 184.

Benign Glycosuria and Diabetes.—Holst investigated 150 persons rejected for life insurance from five to sixteen years previously, on account of glycosuria. Only about 30 per cent of them had diabetes mellitus. The alimentary glycosuria tests do not furnish any differentiating signs between harmless glycosuria and diabetes. Determination of the fasting blood sugar is sufficient for diagnosis and prognosis.

The Circulation in Exophthalmic Goiter.—Liljestrand and Stenström estimate the blood output from the heart in eleven exophthalmic goiter patients at 80 (in the female) to 100 per cent (in the male) above normal: This entails a considerable increase in the work of the heart, since the systolic pressure is usually somewhat increased. The diastolic pressure is slightly below normal.

Hemoglobin and the Circulation.—The basal metabolism was found by Liljestrand and Stenström slightly above normal in four anemic patients (the maximum being + 19 per cent in a case of pernicious anemia). There was a decrease of 15 per cent in a man with polycythemia. The percentage of oxygen utilized during rest is higher in the blood which has a lower oxygen capacity. Therefore the anemic patient can get along during rest with only a moderate increase in the blood output from the heart. The output was distinctly below normal in the patient with polycythemia.

The Circulation in Hypertension and Pregnancy.—Liljestrand and Stenström found increased basal metabolism (average 17 per cent) in five patients with hypertension and chronic nephritis. The utilization of oxygen from the blood was below normal. The blood output from the heart was increased (average 26 per cent). One of these patients was under observation during and after pregnancy. The metabolism fell after delivery from + 22 per cent to + 12 per cent and the minute volume of the heart was reduced from 6 to 4.0 liter[illegible]